

CURRICULUM AND ASSESSMENT POLICY STATEMENT

# ECONOMICS

## GRADE 12

MICROECONOMICS: PAGE 1-62

&

CONTEMPORARY ECONOMIC ISSUES: PAGE 63-133

**PAPER 2 NOTES**

UNDERSTANDING **ECONOMICS**  
WITH NOEL

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### **Purpose of the material**

This study guide notes was developed by Noel M.Mashonga economics educator. The material is in support of the economics textbooks that were developed during the implementation of CAPS and currently exam guidelines 2022.

## PERFECT COMPETITION

### DESCRIPTION

- Perfect competition is a market structure with a large number of participants who are all price-takers, there are no entry or exit barriers in the long run, all information is available to both buyers and sellers and a homogeneous product is sold.
- A market is perfect when there is no excessive control exercised by any of the participants. Individuals do not have market power, because nobody can influence the price, and they accept the market price as it is given.
- There are many relatively small businesses that produce identical goods and services. Large quantities are bought and sold at the market price.
- Perfect competition is very impersonal – each individual competitor acts completely independent from others.
- Each producer will take into account only its own cost structure and the market price when he decides on the quantity he will be willing to produce and sell. He does not take into account what his competitors are doing.

### CHARACTERISTICS/CONDITIONS/FEATURES

#### Homogeneous products

- The products being offered for sale are identical with no obvious differences in quality.
- Products are perfect substitutes for each other, e.g. butter and margarine.
- The product itself does not influence the buyer with regard to which seller he buys from – there is no reason for a buyer to have preference for the product of a particular seller.
- Only totally homogeneous products can compete purely on price, such as painkillers. (generics)

**NB : (Differences in style, design, quality etc. means that apparently similar products are not actually homogeneous)**

#### Large number of buyers and sellers

- It should not be possible for a single buyer or seller to influence the price through his/her actions.
- Each individual producer only supplies a tiny part of the total market supply – they have no market power.
- A producer will be able to control only the utilisation of the production factors and the extent of his production, with no control over prices.
- Each seller or producer is a price taker and it regards the market price as a given. Each producer's share is so small that it cannot influence the market price.
- If a producer tries to charge a price above the market price, consumers will be aware of this, and they will know that they can get a better deal from someone else.

#### There is a high output and large choice

- Because there are many sellers, consumers can shop around and buy from whomever they want.
- There are no shortages because if one seller runs out, there are lots of other sellers that will have stock that they are selling at the same price.

### **Sellers are price takers**

- Market prices should be low – lots of competition.
- Producers can't charge higher prices, as this will result in a loss of market share – their customers will buy somewhere else.
- No individual producer can influence the price by increasing or decreasing his quantities.

### **No collusion**

- Buyers and sellers are neutral and impartial with regard to whom they buy from or sell to.
- Buyers and sellers act independently from one another.
- Only the price may influence the actions of the buyers and sellers.
- Identical products will therefore have the same price in all markets.
- Collusion means that sellers and buyers enter into an agreement, arrangement or understanding to limit competition in order to gain market power so they can influence the price.

### **Profits**

- A perfect competitor can make normal or supernormal (economic) profit in the short run (or a loss).
- Only normal profits can be made in the long run.

### **Freedom of entry and exit**

- The existence of a perfect market depends on producers and manufacturers having free access to markets, but also that they may leave a particular market with little interference.
- No laws, permits, tenders or regulations will prohibit new entrepreneurs to start a business.
- New producers are not impeded by high set-up costs - competition will not be limited to only those with enough money to enter the market.
- New firms have immediate access to the same technology and factors of production as the existing firms, and are able to produce the output at the same unit cost.
- New firms tend to enter markets when existing firms are making economic profits. Firms do not all advertise so there is no customer loyalty – this makes it easier for new firms to gain market share.
- It must be equally possible to leave a business to make an investment elsewhere. There are no sunk costs (cost of production that the firm cannot recover should he leave the industry).
- Losses that may possibly be suffered, will inhibit people leaving the market, and therefore inhibit the working of a perfect market.

### **Free competition (unregulated market)**

- There should be no limitation on the actions of the buyers and sellers.
- Buyers can buy what, where and how many they want.
- Sellers can sell what, where and how many they want.
- There are no restricting measures like government interference and price control.
- Behaviour of buyers and sellers are spontaneous and no measures control or regulate it.

### **Effective transport system**

- Rapid transport is required to transport products from one place to another in order for them to be available everywhere.
- In this way a change in demand or supply in one part of the market will influence the price in the entire market.
- There are no transport costs – consumer can buy the cheapest product from any firm, anywhere.

### **Perfect information**

- All participants in the market must have complete and accurate information about current market conditions.
- All buyers and sellers know what quality of goods is available, what the market prices are and how to produce the product.
- New sellers do not have to learn complicated techniques to compete.
- All buyers know what the characteristics of the producers are, how much they should be paying and where it can be bought.
- An effective communications system is essential in order to make available information about market conditions to buyers and sellers.
- Knowledge of current prices, the economic climate and demand conditions are of the utmost importance.

### **Grading of products**

- Grading ensures that purchases and sales can occur by telephone, letter, price notation, tender, fax etc.
- It ensures that all buyers and sellers are exactly aware of the nature and quality of the product.



### **Products must be durable**

- A perfect market will be very difficult for perishable goods, because their non-durable nature makes it impossible for them to be made available everywhere, on all markets.
- Modern developments in cooling and transport have greatly improved the marketing of perishable products.

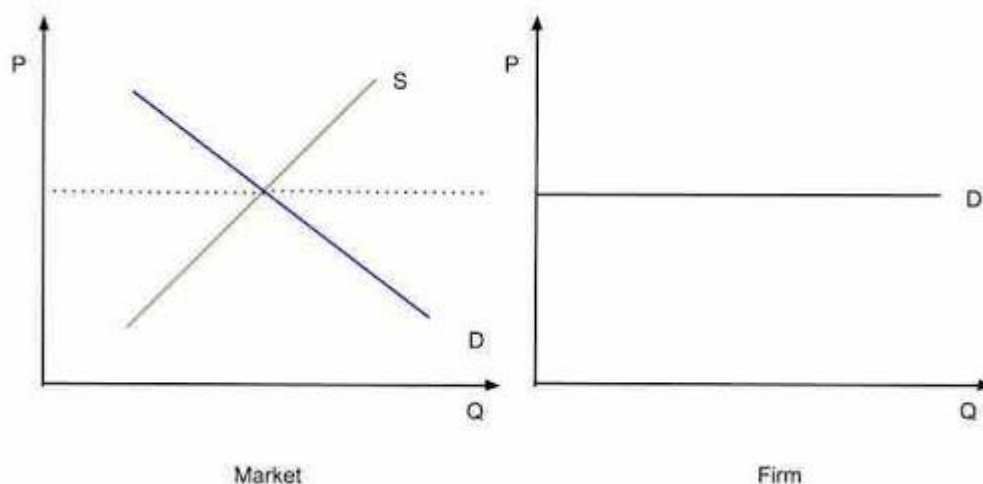
### **Factors of production are completely mobile**

- Labour, capital, natural resources and entrepreneurship can easily move from one geographical area to the next and from one industry to another.
- In the real world perfect competition doesn't really exist – in any market or any economy. It gives us a measure against which we can compare other forms of competition. It also provides us with a simple model that can be used to predict how individual businesses will behave under certain economic conditions.

## **THE INDIVIDUAL BUSINESS AND THE INDUSTRY**

- An industry consists of all the firms that produce the same product.
- The output of an industry is the sum of the output of its individual firms.
- Some industries have a large number of participants, while others have only a few (or even just one).
- The number of firms in an industry will influence the market power (ability to influence the price) and the behaviour of the individual producer in the industry.

- The fewer firms there are in an industry, the more market power these firms have



## THE INDUSTRY

### a) Demand curve

- To find the demand curve for the industry, we need to add the individual demands curves for a particular product.
- The market demand at each price is the sum of all the individual demands.
- We add the individual demand curves horizontally to obtain the market demand.
- The market demand curve shows the total quantity demanded of a product.

### b) Price formation

- The industry's market price is determined by the interaction between the market demand and market supply – illustrated above.
- The market demand curve (D) has a negative slope and the market supply curve (S) has a positive slope.
- The point of intersection determines the market price – P.

## THE INDIVIDUAL BUSINESS

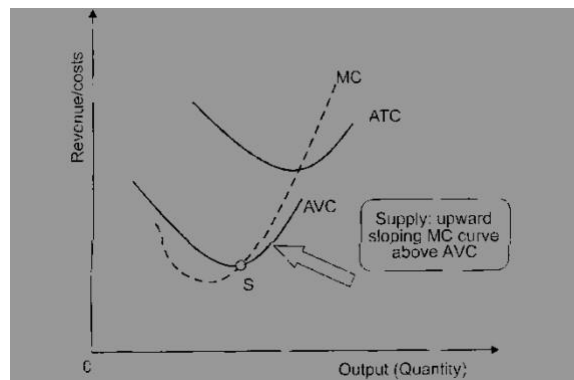
### Demand curve

- Because the individual producer is only a small part of the industry (he is a price taker), it cannot influence the price and has to accept the market price (P) as given.
- The business can decide to sell any quantity of the product at the given market price.
- This means that the demand curve for the individual producer will be horizontal (perfectly elastic) at the market price P.
- The individual producer will not be able to charge a higher price, because all the buyers would know what the market price is supposed to be and they will buy from another producer.
- The individual producer also will not charge a lower price, because it would not be rational and he will not be able to maximise his profits.

- The marginal revenue (MR) resulting from an increase or decrease in sales by one unit is constant and it will equal the market price for that product or service.
- MR will equal average revenue (AR) and will stay constant as output varies.
- Total Revenue (TR) will increase or decrease as the output changes.

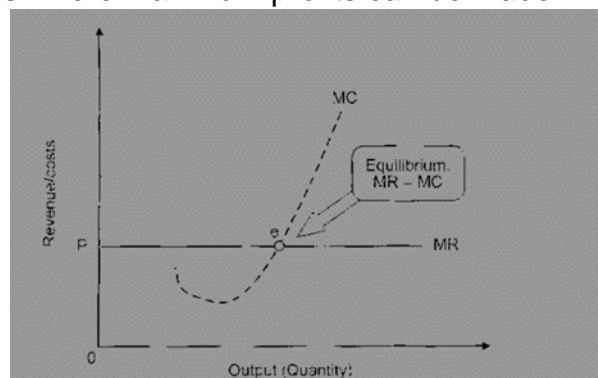
### DERIVATION OF SUPPLY CURVE FROM COST CURVES

- An individual businesses' MC curve and AVC curve determine its supply.
- The individual firm's supply curve is the upward-sloping portion of the MC curve that is above the AVC intersection.
- MC always intersects AVC at its lowest point.
- The reason for this is that an individual business will only produce when the price lies above the minimum point on the AVC curve (point S).
- If a business cannot cover its variable costs, it will shut down.



### PROFIT MAXIMISATION

- An individual business in the perfect market will be in equilibrium when the marginal revenue (MR) is equal to the marginal cost (MC).
- When  $MR = MC$  the business will continue to produce on that level of output because this is where maximum profits can be made.



### THE MARKET STRUCTURE

- The term market structure refers to the main characteristics of the market in which individual businesses sell their products.
- The market structure takes into account different factors that determine how buyers and sellers interact with one another in the market.
- Market structures are classified as having perfect competition or imperfect competition.

- When there is perfect competition there are many buyers and sellers who are price-takers and who sell identical products.
- Imperfect competition exists when the conditions for perfect competition have not been met.

## **OUTPUT, PROFITS, LOSSES AND SUPPLY**

### **OUTPUT**

- Output refers to the quantity of units produced.
- The amount of revenue earned by the business increases with each additional unit produced, but so do the costs.
- The business will decide on an output level where they can maximise their revenue, but also minimise their costs.

### **Output decisions of the Individual business**

- In a perfectly competitive market, the objective of the firm is not only to make some profit, but to maximise its profits.
- The demand curve for the individual producer is a horizontal line at the level of the market price.
- Under conditions of perfect competition an individual business will take into account only the given market price and its own cost structure to determine his output.
- Since the individual producer is too small to influence the prices, it has to take the price as a given, and based on this price, decide the following:
  - Whether it should continue with its production or should consider closing down its operations.
  - If it decides to continue with its operations, how much it should produce in order to maximise its profits.

#### **a) Short run - how much to produce?**

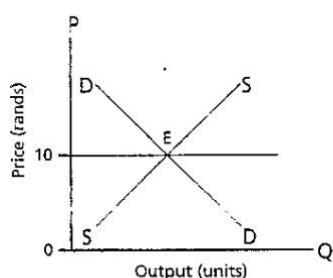
- There are two ways in which the producer can answer this question.
  - The marginal revenue-marginal cost rule. o Produce the level of output where the positive difference between the total revenue and total cost is the greatest.

### **Marginal revenue-marginal cost rule**

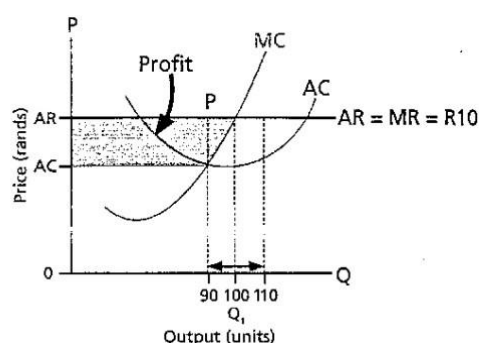
- An individual business is a passive price taker – it cannot influence the price, it can only adjust its output to the changes in market conditions.
- The individual business will always maximise profits at the level of output that is determined by the point of intersection of MC and MR.
- The demand curve is a horizontal line at the level of the market price. NB:  $D = AR = MR$ ; In the graph below, the market price is R10.
- The point e represents equilibrium (profit maximisation point) – the point where MC and MR intersect. The equilibrium quantity at this point is 100.



The industry:



The individual producer:



- **Marginal cost** is the addition to the total cost required to produce one additional unit of output.
- **Marginal revenue** is the addition/al income received from selling one additional unit

- To the left of point e (for example at an output of 90 units),  $MR > MC$  (MR curve is above the MC curve). The added benefit of producing an extra unit is more than the added cost of producing it, and the business can increase profits by producing more.
- To the right of point e (for example at an output of 110 units),  $MC > MR$  (MC curve is above the MR curve). The added benefit of producing an extra unit is less than the added cost of producing it, so the business does not benefit from producing more.
- If the individual business is getting maximum profits, there is no need to change the levels of output.

**Profit maximising rule:**  
**MR = MC**

**Total revenue-total cost approach**

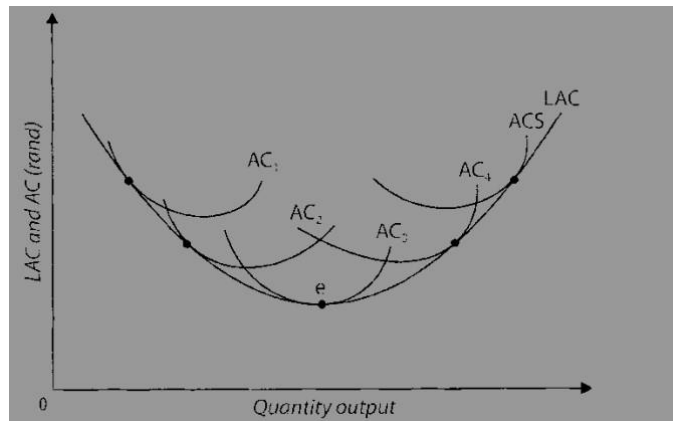
According to this approach, the firm should expand its production until it reaches the point where the positive difference between total revenue and total cost is at its maximum.

Q	P	TR	TC	Profit/Loss TR-TC
0	5	0	1	-1
1	5	5	3	2
2	5	10	6	4
3	5	15	10	5
4	5	20	15	5
5	5	25	21	4
6	5	30	28	2

Profits are maximised when the positive difference between revenue and cost is at its maximum. This occurs at an output of four units.

Long run - how much to produce?

- In the long run all inputs are variable. There are no fixed costs – all costs are variable.
- Individual businesses can change the size of the factory, hire more workers, add extra production lines etc.
- The industry might also either expand or shrink because new businesses will enter or existing ones will leave the industry.
- If an entrepreneur starts on small scale and expand over time, the average costs will initially decrease because large scale production will reduce unit costs due to specialisation and improved technology (economies of scale).
- A business can also become too large and clumsy and reach a stage where further expansion will result in higher unit costs. This is called diseconomies of scale.



- In the graph above AC 1 represents the short-run average cost for the smallest factory and AC 5 the biggest factory.
- The building of a factory bigger than AC 1 will decrease the average costs – this applies up to factory AC 3.
- Once we increase the factory size more than 3, the average costs starts to increase (minimum points of AC 4 and AC 5 lies above that of AC 3).
- The entrepreneur will not expand past factory 3.
- If we draw a curve around the outside of the short term AC curves in such a way that it lies tangent with them, we get the long-run average cost (LAC).
- This LAC curve indicates the lowest cost per unit at which any output can be produced in the long run (point e).

### The output of the Industry (market)

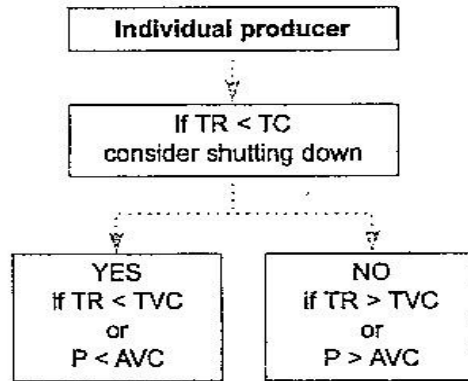
- The industry is at equilibrium at the point where quantity demanded is equal to quantity supplied.
- Businesses making economic profit will expand their factories in the long run and new businesses will be attracted to the industry by the economic profits made by existing firms (freedom of entry).
- Businesses making losses might close down in the long run (freedom of exit).
- When businesses are entering or leaving the industry, the result is an equilibrium in which all businesses are making normal profits.
- There will be no more businesses entering or leaving the industry.

**Shut-down Rule**

- When should a firm consider shutting down its production?
- The first warning light is when the total revenue (TR) is less than the total cost of production (TC). In this case the firm will make a loss and it should seriously consider whether it should continue with its operations.
- To understand why sometimes it would be in the interest of the firm to continue production even if it makes a loss, we need to look at the difference between fixed and variable costs:

<b>Fixed costs (FC)</b>	<b>Variable costs (VC)</b>
The costs that remain constant regardless of the level of output that is produced.	The costs that change with the level of output. As more of a good is produced,
Even if there is no production, there will still be a fixed cost.	the level of variable costs will increase. If there is no production, VC will be 0.
As the firm increases production, the fixed costs do not increase – they remain the same.	These costs can be avoided if the firm shuts down its operations.
Examples are: maintenance of buildings, rent for the building etc.	Examples include: raw materials, electricity, water etc.
Are also known as sunk, unavoidable, overhead or indirect costs.	Also known as direct costs, prime costs or avoidable costs.

- As a rule, a firm should shut down its operations if TR is smaller than the TVC.
- The firm should continue producing if the TR is greater than the TVC. If it does so, it will minimise its losses.
- There is another way to describe the shut-down rule: By comparing the price with the AVC.
- AVC is the total variable cost divided by the quantity produced.
- As long as the price is higher than the AVC, it is in the interest of the firm to continue their production.
- If the price is lower than the average variable cost, the firm should shut down its business.



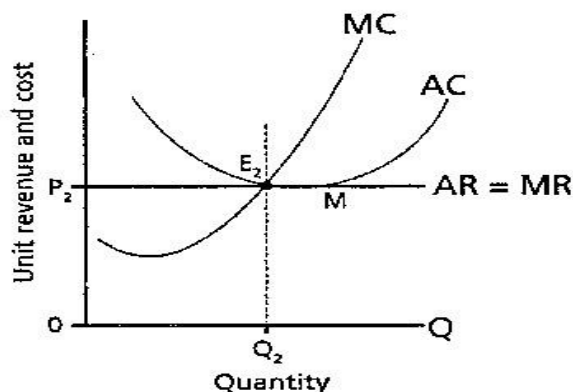
## PROFIT

- Profit is the positive difference between revenue and costs.
- Whether the business makes a profit or loss depends on the location of the short-term AC curve in relation to the market price when the business is in equilibrium.
- We distinguish between normal and economic profit.
- In the short run individual businesses can make normal profit, economic profit or economic loss. In the long run the individual business can only make normal profit.

### Normal profit



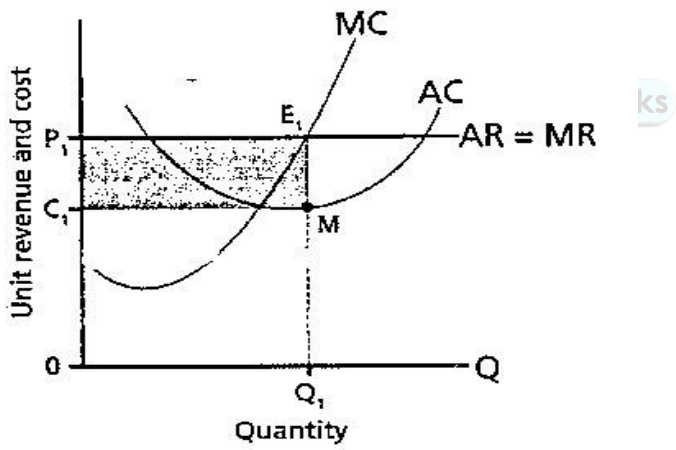
- Normal profit is the minimum earnings required to prevent the entrepreneur from leaving the business and applying his or her factors of production elsewhere.
- A business makes a normal profit when its revenue covers all of its costs (both explicit and implicit costs).
- Explicit costs are the actual expenditure of a business (wages, interest, cost of raw materials, rent).
- Implicit costs include an acceptable remuneration for the entrepreneur and the opportunity cost for his factors of production.
- When the AC curve lies **on top of**  $AR = MR = P$ , the business breaks even, and only normal profits are made.



**Normal profit:**  
 $TR = TC$   
 $AR = AC$

**Economic profit (abnormal or supernormal profit)**

- Economic profit is profit that a business makes that is more than the normal profit.
- A business makes economic profit when its revenue is more than all of its costs (explicit and implicit costs).
- Economic profit is also called surplus, extra or excessive profits.
- When an entrepreneur receives economic profits, he actually receives more than necessary, because his remuneration is already included in the normal profit.
- Economic profits don't last long under perfect competition, because these profits will attract more businesses into the industry.
- When the AC curve is **under**  $AR = MR = P$ , an **economic profit** is indicated by the shaded area.

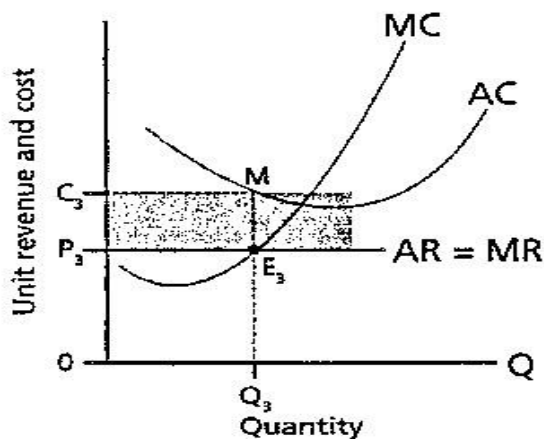


**Economic profit:**  
 $TR > TC$   
 $AR > AC$

**LOSSES**

- If the market price falls below the average cost of the individual producer, he will make an economic loss.
- Whether or not a firm will continue producing depends on the level of average revenue (price) relative to the average variable cost of the firm.
- At any price lower than variable cost it will be in the best interest of the firm to shut down.

- Shutdown point occurs at the point where price is equal to average variable cost.
- It is only possible for a business to make a loss in the short run. In the long run, no firm will stay in the industry – there is freedom of exit – they will leave the industry to make an investment somewhere else.
- When the AC curve is **above**  $AR = MR = P$ , a **loss** is indicated by the shaded area.



**Economic loss:**

$$TR < TC$$

$$AR < AC$$

## COMPETITION POLICIES

### DESCRIPTION

Competition policies are measures taken by governments with the primary aim of improving the efficiency of markets.

- Markets can only operate efficiently if there is healthy competition.
- Competition refers to the existence of free entry and exit from markets. This will ensure that markets are free from domination by individual businesses or groups of businesses.

### GOALS OF COMPETITION POLICY

- To improve the efficiency of markets through legislation.
- To promote healthy competition between businesses.
- To prevent unfair methods of achieving and exercising market power.
- To prevent the abuse of economic power by monopolies.
- To regulate the increase of market power by means of take-overs and mergers of large businesses.
- To prevent restrictive practises, especially price-fixing and collusion by oligopolies.

- To protect the consumer against unfair prices and inferior products.
- To contribute to South Africa's development objectives to ensure that all South Africans have equal opportunities to participate fairly in economic activities.
- To promote equity in the markets.

### **ANTI-MONOPOLY POLICY**

After 1994 a strict anti-monopoly policy was adopted.

- This was introduced to promote competition policy in South Africa.
- The objectives of anti-monopoly policy are as follows:
  - To limit any restrictions on entry to an industry.
  - To give previously disadvantaged groups access to resources and economic power to promote economic transformation in the country.
  - To curb economic power of the big conglomerates in the South African economy to obtain a more equal distribution of income and wealth.
  - To make businesses more competitive so that they can gain access to the international markets.
  - To make our policies more compliant with international requirements.

### **COMPETITIONS ACT (ACT 89 OF 1998)**

- The purpose of the new Competitions Act is to promote and maintain competition in South Africa in order to achieve the following objectives:
  - To promote efficiency, adaptability and development of the economy.
  - To provide consumers with competitive prices and product choices.
  - To create employment and increase the welfare of South Africans.
  - To increase South Africa's participation in world markets.
  - To give small and medium businesses an equal opportunity to participate in the economy.
  - To promote the spread of ownership and to increase ownership of historically disadvantaged people.
  - To provide all South Africans an equal opportunity to participate fairly in the economy.
- Three institutions were created in terms of the Act to achieve these objectives:
  - Competition Commission
  - Competition Tribunal
  - Competition Appeals Court

### **The Competition Commission**

- The commission is the investigation and enforcement agency.
- The functions of the Competition Commission include:
  - The investigation of anti-competitive conduct and restrictive practices.

- The assessment of the impact of mergers and acquisitions on competition – mergers cannot take place without the consent of the Commission. When evaluating mergers, any matters relating to competition and efficiency, and public interest must be taken into account.
- Monitoring competition levels and market transparency in the economy.
- Identifying impediments to competition.
- Playing an advocacy role in addressing these impediments.
- The Commission is independent, but its decisions may be appealed to the Competition Tribunal and Appeals Court.
- The Commission's recommendations are submitted to the Tribunal, who can either accept or reject its recommendation.

### **The Competition Tribunal**

- The Tribunal is the adjudicative body, very much like a court.
- The head of the Tribunal is appointed by the President of South Africa.
- A minimum of 3 and maximum of 10 other members form part of the Tribunal.
- The main functions include:
  - Granting exemptions.
  - Authorising or prohibiting
  - Authorising or prohibiting large mergers.
  - Adjudicating on any conduct prohibited by the Act



### **The Competition Appeal Court**

- The Competitions Appeals court considers appeals against decisions of the Tribunal.
- Has similar status as the High Court in South Africa.
- Members of the court are appointed by the president of South Africa.
- At least 3 members of the Appeals Court must be judges of the High Court.
- Two other members must have suitable qualifications and experience in economics, law, commerce, industry or public affairs.
- Functions:
  - It can review any decision of the Competition Tribunal.
  - It can confirm, amend or set aside any decision or order that is subject to appeal or review by the Competition Tribunal.
  - May give judgement or make any order that is required.
  - Must also confirm any order by the Tribunal to separate the assets of parties that have merged in contravention of the Act.



## MONOPOLY

### DEFINITION:

A monopoly exists when there is only one seller of a good or service for which there is no close substitutes and when barriers block entry into the market completely.

### CHARACTERISTICS

#### **There is only one seller**

- There is no competition.
- One seller completely controls the supply of goods and services to the market.
- Because the monopolist is the only supplier of the product in the market, the demand curve that confronts the monopolist is that of the market as a whole.
- *For example:* De Beers is the only diamond seller and represents the total diamond industry.

#### **The product is unique**

- The consumer will have no choice in price, quality or supplier, as there are no close substitutes to choose from.
- The product or service will be unique in ways that go beyond brand identity and cannot easily be replaced by another product or service.
- The consumer can only buy from the monopoly, or will have to go without the product.
- *For example:* Diamonds are unique.

#### **Price makers**

- The monopolist is regarded as a price maker, since it is able to influence the market price by changing the quantity it supplies to the market.
- A monopoly does not have control over demand, so demand will influence the final market price.
- Once a monopolist has decided on a price, the quantity sold is determined by market demand. By reducing the price, monopolists can sell more units of the product – he needs to decide at which point on the demand curve he wants to produce.

#### **The monopoly can exploit consumers**

- The monopoly produces fewer products at a higher price compared to businesses under perfect competition.
- Monopolists can ask higher prices because it has no competitors.
- However, governments generally take steps to guard against such practices.
- The Competition Commission keeps an eye on all monopolies.
- *For example:* De Beers can ask high prices for their diamonds, because it has no competitors.

#### **Barriers to entry**

- The reason why other producers are unable to supply the same product as the monopolist is that there are barriers to entry that prevent them from entering the product market.
- Examples of barriers are:

- Natural obstacles such as exclusive ownership of natural resources. *For example:* De Beers had the sole ownership of the diamond industry for years.
- Economies of scale give advantages to large existing businesses – small businesses cannot compete with bigger businesses because their production costs are higher. *For example:* Eskom is a large business that enjoys economies of scale.
- High starting capital. *For example:* NASA (National Aeronautics and Space Administration) will not have any competitors in the same country.
- The geographical area can form a natural barrier. *For example:* only one resort can fit on the seafront of an exclusive beach.
- Licencing. *For example:* The SABC was given a licence that kept other broadcasters out of the South African market for a long time. Telkom was also the only company that was licensed by the South African government to supply fixed landline telecommunications.
- Patent rights give the patent holder the exclusive right to produce a product for as long as the patent is valid (up to 20 years). This protects the market of new inventions. *For example:* Xerox, Kreepy Krauly and IBM products had monopolies that existed due to patent rights.
- Limited size of the market – if the market is small, one producer might be able to satisfy the demand without room for a competitor. *For example:* there may only be one hardware store in a particularly small town.
- Legal restrictions – government gives exclusive rights to produce to a particular firm. *For example:* SABC had the sole right to broadcast over television and radio. Telkom had the sole right to provide telecommunication services.

#### **Complete market information exists**

- All buyers and the single seller have full knowledge of all the current market conditions.
- However, new firms wishing to enter the market will not have the same information available to them – this will hamper their ability to enter the market.

#### **Supernormal profits (Economic profit)**

- It is possible that a monopoly can make normal profits in the long run, but it is more likely that the massive market power and high prices will ensure that it makes an economic profit.
- The monopoly is also able to use its bargaining power and superior knowledge of the market to reduce its production cost.

#### **Economies of scale**

- The size of the large monopoly gives it a cost advantage over a smaller competitor.
- It will be impossible for the smaller firm to compete.

#### **Technical superiority**

- Some monopolies have technological expertise that exceeds that of any existing or potential competitor.
- This can keep the monopolist in its position for a long time.

- *For example:* DStv has superior knowledge of the satellite TV market that would make it difficult for competitors to enter the market. Microsoft is the largest producer of computer technology and dominates the market with their Windows operating system.

## **TYPES OF MONOPOLIES**

### **Natural monopoly**

- Natural monopolies exist when one large business can supply the entire market at a lower price than two or more smaller ones.
- A natural monopoly is created if a single firm owns or controls a specific scarce resource – competitors are excluded from entering the market because the resources are unavailable to them.
- If a company has technical advantages over competitors, it makes it very difficult for them to enter the market.
- It is also sometimes difficult to compete against a well-established brand.
- High development costs can also make it difficult for new competitors to enter the market.
- Natural monopolies are often owned or regulated by the government.

### **Artificial monopoly**

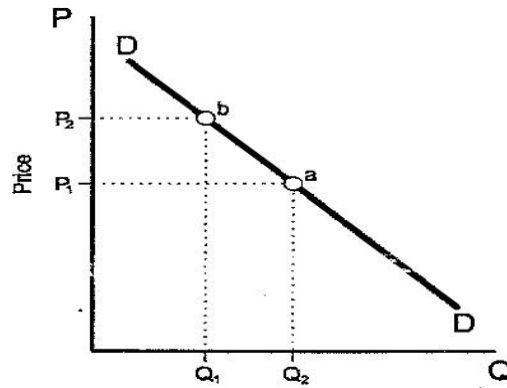
- The barriers to entry are not economic in nature.
- Legal restrictions such as laws made by the government that gives one firm the exclusive right to produce a particular product, for example the South African Post Office was given the sole right to handle mail.
- Patent, licences and copyright can also restrict market entry.
- Deliberate actions by the monopoly firms themselves – an aggressive advertising campaign can make it very difficult for rivals to be competitive.

## **INCOME**

- Although the monopolist is a price maker, it does not mean that it can control both price and quantity, because it must still take the law of demand into account.
- The law of demand states that the higher the price, the lower the quantity demanded, and the lower the price, the higher the quantity demanded.
- What the monopolist does is to decide which price-quantity combination suits him the best.

### **The demand curve of the monopolist**

- The monopolist's demand curve is downward sloping, and is also the market demand curve, since the monopolist is responsible for the entire output.
- In the graph below, the market demand is DD. The monopolist must choose which combination of price and quantity he wishes to deliver to the market.
- If he chooses combination (a), where the price is P1 and the quantity is Q2, it means that it cannot ask a price of P2 and still expect to sell a quantity of Q2.
- A monopolist therefore cannot set its sales and its price independently of each other.



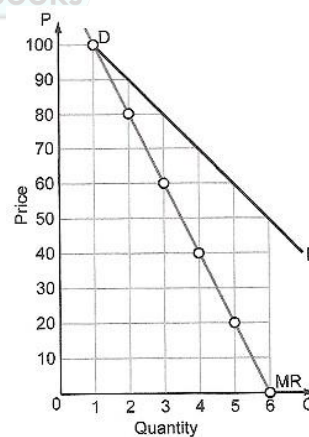
- The monopolist also wishes to maximise its profits and will choose that combination of price and quantity where this occurs.
- Note that the monopolist's demand curve is also his AR curve.

**The marginal revenue curve for the monopolist**

- Since a monopolist faces a downward sloping demand curve, the marginal revenue curve and the demand curve is not the same curve (as under perfect competition).
- Because the demand curve of the monopolist has a negative slope, it implies that if he wishes to increase his sales, he would have to decrease his prices.
- The marginal revenue will therefore be less than the price.

Example:

P	Q	TR	MR
	0	0	0
100	1	100	100
90	2	180	80
80	3	240	60
70	4	280	40
60	5	300	20
50	6	300	0



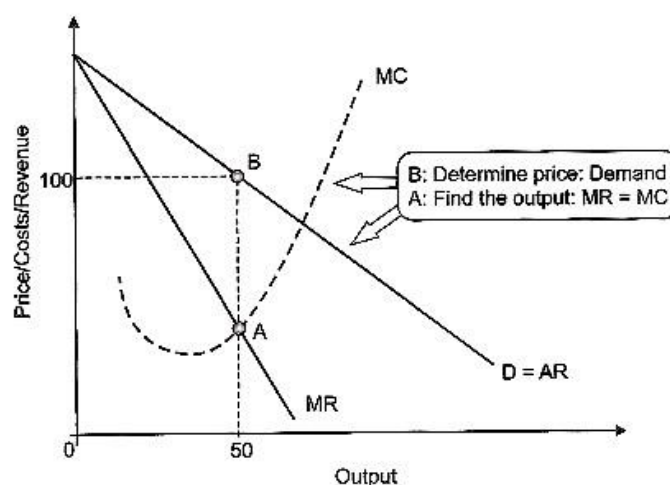
- If the price is R90, it sells 2 units and the total income is R180.
- The contribution the second unit makes to TR (i.e. the MR) is R80, which is less than the price.
- The MR of the 3<sup>rd</sup> unit is R60, which is also less than the price of R80.
- The reason for this is simple: when the monopolist drops his price, both the first and second customer pays the lower price. He gains the R90 from the second customer, but loses the R10 from the first customer.

**Three implications of a downward-sloping demand curve:**

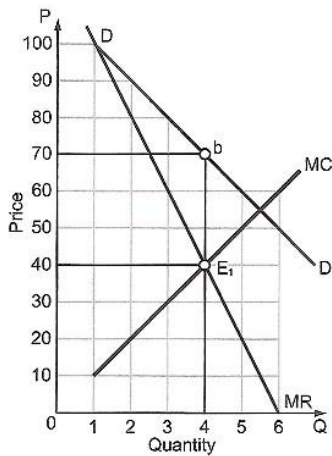
- The MR curve runs below the demand curve (AR curve), and shows that, with the exception of the first unit, MR is always lower than AR. The MR curve intersects the horizontal axis at a point that is exactly halfway between the origin and the point of intersection of the demand (AR) curve.
- The monopolist will have a pricing policy. The monopoly is the only supplier in the market, and with the downward-sloping demand curve, where each quantity supplied is associated with a unique price more units can be sold by reducing the price. The monopoly can therefore influence the price-quantity combination of its product.
- A monopoly will always try not to fix its price below the centre of the demand curve. The reason for this is that the total revenue will then start to decline because the price will be in the inelastic part of the demand curve and the point will be reached where MR becomes negative.

### COST CURVES, OUPUT AND PRICE OF A MONOPOLY

- A monopoly has the same costs as a business under perfect competition, so the shapes of the cost curves will be the same as those of a business under perfect competition.
- A monopoly also wants to maximise its profits. It will be most profitable for a monopoly to produce at the output level where  $MC = MR$ . In the figure below, this will be at an output level of 50 units.
- After determining output, you can determine the price at which the monopoly can sell its products. His demand curve determines the price. In the graph below, at the profit maximising output of 50 units, move vertically upwards from point A to point B – the price that corresponds with the 50 units is R100. This is the price that the monopoly will charge for his products.



- In the figure below, the profit maximisation is where  $MC = MR = R40$ . This is indicated by point  $E_1$ .



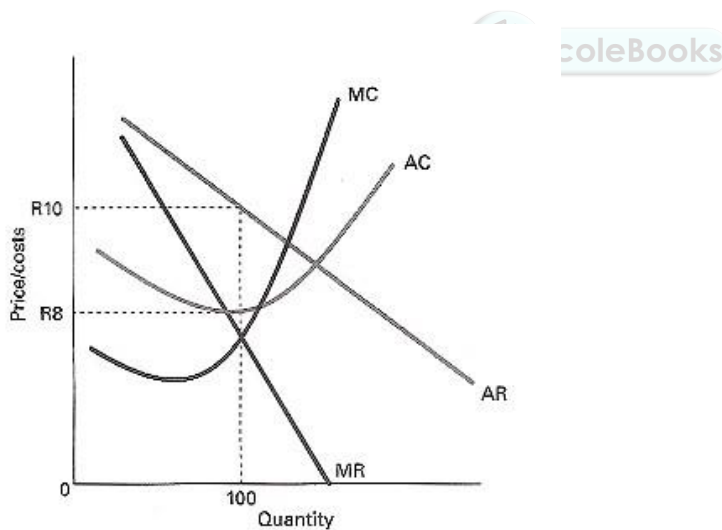
- At lower levels of output  $MR > MC$ . Each additional unit contributes more to revenue than it costs to produce that unit, so profits can be increased.
- At output levels higher than the 4 units,  $MR < MC$ . Each additional unit contributes less to revenue than it costs to produce, so profits will decline.

### PROFITS AND LOSSES IN THE SHORT RUN

- The placement of the AC graph will determine whether the monopolist makes a normal profit, economic profit or economic loss:

#### Economic profit

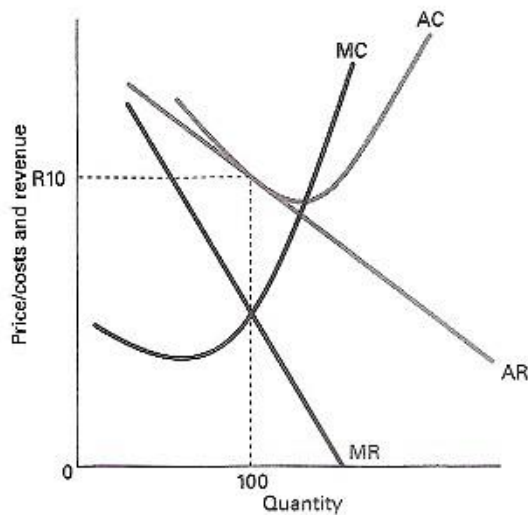
- If the AR exceeds the AC (or  $TR > TC$ ), the firm will make an economic profit.
- When the AR curve is above the AC curve, an economic profit will be made:



- The economic profit is indicated by the shaded area on the graph.

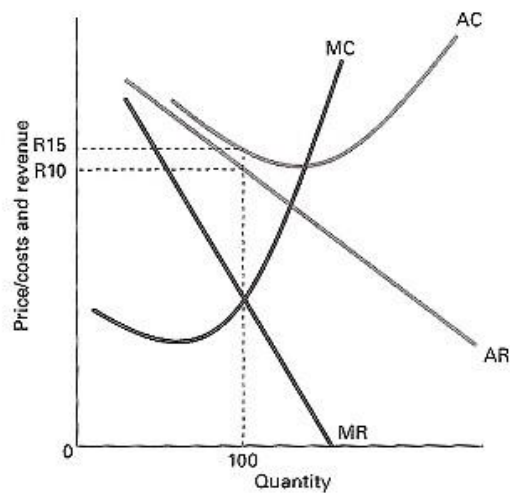
#### Normal profit

- The firm may experience low revenue if the product is unpopular or high costs if production is inefficient or badly organised.
- If the AC equals AR (or  $TC = TR$ ), the firm will make a normal profit.
- When the AC curve is tangent with the AR curve, a normal profit will be made.



### Economic loss

- Some people argue that because the monopolist is the only supplier, it will always make an economic profit. However, his profitability depends on the demand for the product as well as the cost of production.
- The monopolist can produce at a level of output where revenues are too low or where costs are too high.
- If the AC exceeds the AR (or  $TC > TR$ ), the firm will make an economic loss.
- When the AC curve is above the AR curve, an economic loss will be made.

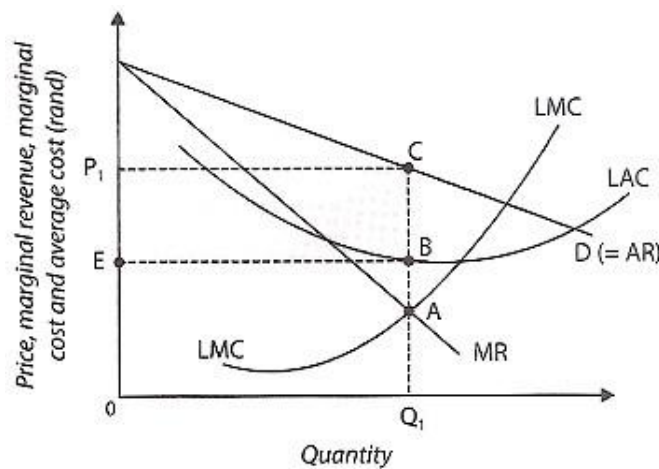


- The economic loss is indicated by the shaded area on the graph.

### LONG-RUN EQUILIBRIUM AND ECONOMIC PROFIT

- The monopoly will continue to earn economic profit unless there is an increase in costs, a fall in demand or when a competitor enters the market.

- A monopoly can make economic profit in the short run as well as the long run. It blocks other businesses from entering the market so new entries into the market are not able to reduce its short-run economic profit.
- It will thrive on the lack of competition due to high barriers to entry.
- If the monopolist loses some of its demand due to changes in consumer tastes or economic climate and falling incomes, it will still make normal profits in the long run.
- In the long run, the monopoly will not make a loss.
- If the monopoly makes a loss in the short run, it will build a plant size that will create a profit, otherwise production will stop and the business will close down.



## COMPARISON WITH PERFECT COMPETITION

### Assumptions

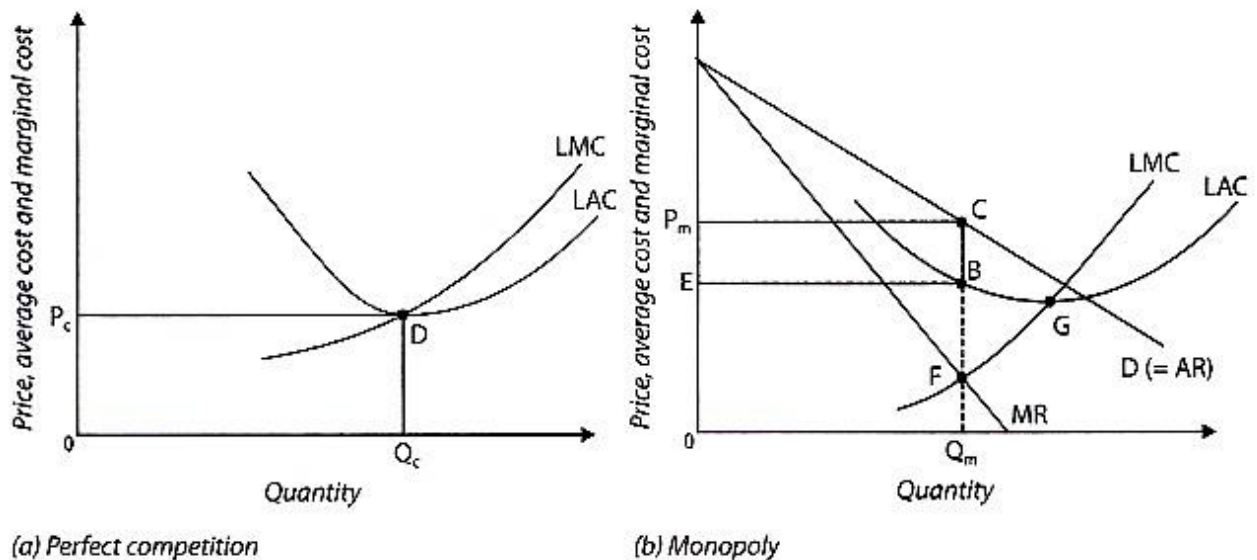
- We assume that we can add together all the data of all the businesses in a perfectly competitive market (merge them for the sake of analysis), but assume that their costs curves do not change.
- After merging all the data, the cost structure of the “new firm” is the same as that of the monopoly.
- The “new firm” retain all the characteristics of perfect competition and do not act like a monopoly.

### Higher price, lower output

- When our newly established business is in long-run equilibrium under perfect competition, it will produce quantity  $Q_c$  and sell it at price  $P_c$ .
- When the monopoly is in long-run equilibrium, it will produce quantity  $Q_m$  and sell it at price  $P_m$ .
- With the same costs a monopoly will restrict its output and charge a higher price than a business under perfect competition. So a monopoly will produce less and ask a higher price in the long run.
- A monopoly does not produce at the lowest possible costs – at profit maximisation point, AC is not at its lowest. So the monopoly is less efficient at allocating resources.



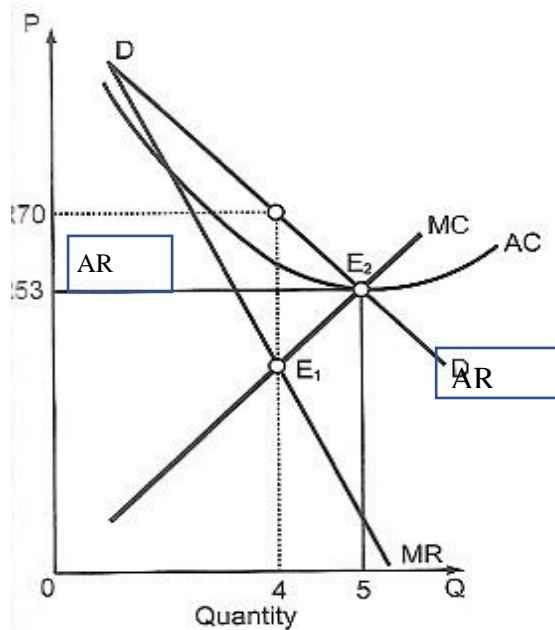
- The perfect market is both productively and allocatively efficient when it maximises profit. Productive efficiency means that goods are produced at the lowest possible cost. This is achieved because AC is at its lowest when profits are maximised. Allocative efficiency is achieved because price is equal to marginal cost.



### Economic profit



- Under perfect competition, only normal profit will be made in the long run. The monopolist, on the other hand, can make economic profit in both the short and long run.
- In the graph, the perfect competitor makes only normal profits at profit maximisation point (point D) as  $AC = AR$ .
- The monopolist makes economic profit at profit maximisation point (point F) – economic profit indicated by shaded area.
- When we compare the output, price and profit position of the monopolist with those of perfectly competitive businesses, we see that a monopolist can be regarded as inefficient.
- The monopolist charges a high price, supplies a lower quantity and earns an economic profit.
- Under perfect competition, when economic profits earned the entry of new firms will cause competition to increase and economic profits will disappear in the long run.
- In the case of a monopolist there are barriers to entry which protect him from competition.
- This enables him to continue earning economic profits in the long run. A change in profits will only come if there are changes in the demand for the product or if the production cost changes. If we do the comparison on one graph, it will look as follows:



- Curve D represents the market demand curve for the monopolist and also the market demand curve for the industry in a perfectly competitive market.
- Curve  $D=AR=MR$  represents the demand curve, average revenue curve and marginal revenue curve for the individual producer under perfect competition.
- The MC curve represents the marginal cost for the monopolist as well as the individual producer under perfect competition.
- The MR curve represents the marginal revenue for the monopolist.
- The perfect market:
  - Prices are formed by the interaction between market demand and market supply (supply = upward sloping section of MC).
  - Market price is R53.
  - Individual producer's demand curve is horizontal at the price level.
  - Profits are maximised at point E2 where  $MC = MR$ .
  - The profit maximising output is 5 units.
  - Individual producer is making normal profits because at E2  $AC = AR$ .
- The monopolist:
  - Profit maximisation is at point E1 where  $MC = MR$ .
  - The price is R70 and profit maximising output is 4 units.
  - Monopolist charges a higher price and supplies a smaller quantity than perfect competitor.
  - Monopolist makes an economic profit because  $AR > AC$ .

## **OLIGOPOLY**

### **DEFINITION**

- An oligopoly is a market structure in which a few sellers dominate the market. Each seller influences the others and also considers them in his decision making.
- When there are only two businesses in an oligopoly market, it is known as a duopoly.
- Worldwide, an oligopoly is the most common market structure of modern economics.
- Examples of oligopolists are found in the oil industry, steel and cement industries, the cellphone industry, the car industry, the bread and milk industries, the washing powder industry and the fertiliser industry.
- An oligopoly exists when the top five firms account for more than 60 % of the demand and sales in the total market.

### **CHARACTERISTICS OF AN OLIGOPOLY**

#### **Limited competition**

- Only a few large sellers of the same product dominate the market.
- Usually there are a few big firms that dominate the market plus a number of smaller firms, which together produce a small percentage of the total output.

#### **Interactivity (interdependence)**

- Each seller is influenced by the actions of other sellers.
- Decisions of one seller will influence the decisions that other sellers make.
- The decisions regarding prices, quantities and marketing depends on what it thinks the other oligopolists in the market is going to do in response to his actions.
- Competitors may react in many different ways to a price reduction by a competitor – it is impossible to formulate a single theory for price and production decisions.
- The general behaviour of oligopolists cannot be predicted with certainty.

#### **Oligopolies can control prices**

- Each business has considerable control over prices, especially when they get involved in joint decision-making.
- This will result in abnormally high prices and profits.
- Oligopolies are characterised by price rigidity because if one firm decreases his prices, competitors will also decrease theirs. A price decrease by one firm can initiate a price-war.

#### **The nature of the product**

- Products can be homogeneous or differentiated.
- Examples of homogeneous products in an oligopoly are the oil, petrol or bread industry.
- If products are homogeneous the market is known as a pure oligopoly.

- In a pure oligopoly industry produce intermediate goods that are used by other, different industries later on for manufacturing their products.
- Products can also be differentiated, such as the car and cell phone industry.
- If products are differentiated, it is known as a differentiated oligopoly.
- In a differentiated oligopoly, the goods manufactured are for personal consumption. Consumers need a variety of goods, as they have different preferences.
- Whether products are differentiated or homogeneous, they will be substitutes for each other.

### **Difficult entry**

- Barriers to entry can be natural or artificial.
- New sellers can have difficulty entering the market because of natural barriers to entry such as economies of scale that the few large existing firms enjoy.
- There might also be large capital requirements to enter the industry.
- An important barrier is also consumer preferences for certain brands (e.g. Coca Cola).
- Therefore, entry into the market (and competition) is limited.
- Smaller firms can operate on the edges of the market, but their impact on prices and output will be limited.
- *Example:* In South Africa we have only three producers in the cell phone (service provider) industry. The reason is that the government has licensed only these three firms to operate in the market (artificial barrier) – it is impossible for others to enter the industry.

### **Buyers and sellers have incomplete information**

- Neither buyers nor sellers have full knowledge of current market conditions.
- Oligopolists watch each other closely, but they don't always know how buyers and the competitors will react.
- Each firm tries to prevent his competitors from gaining knowledge of his production process – its new products and any results of new research resulting in new product development.

### **NON-PRICE COMPETITION**

- Oligopolists try to avoid using prices to compete – therefore prices are relatively stable under an oligopoly.
- The reason for this is that there is enough competition from other firms and if prices are increased, the firm will lose market share.
- However, if the firm decreases his prices, it will immediately be copied by competitors. This can result in a price war and lower profits for all firms.
- Non-price competition can take the following forms:
  - Product development: new products with unique characteristics and variations in quality are introduced to attract new customers.
  - Advertising: firms spend lots of money to establish brand loyalty with existing customers and to attract new customers using media, special offers, publicity stunts and discounts.
  - Loyalty schemes: getting customers to sign up for loyalty cards encourages buyers to shop in one place. This creates a relatively inelastic demand as substitutes are basically eliminated.

- Product proliferation: each firm produces a range of products to cater for as many different tastes as possible. Car manufacturers produce a range of vehicles from small hatchbacks to SUV's and 4 x 4's.
- Packaging: if one product has a more inviting packaging than the other, consumers tend to buy it.
- Branding: when a product or business is given a particular image which is appealing to consumers. This image includes a visual identity and values, attitudes and behaviours. For example, certain brands of cars are known to be for wealthier people and other brands for the working class. Branding is used to appeal to a certain kind of customer.
- Other forms of non-competition include:
  - ✦ Free deliveries and installation;
  - ✦ Extended warranties for consumers and credit facilities;
  - ✦ Longer trading hours (for example trading on a Sunday);
  - ✦ Extensive after-sales services;
  - ✦ Doing business over the internet;
  - ✦ Offering additional services (for example free travel insurance offered by banks);
- In general, non-price competition raises the cost of production and makes it more expensive for new firms to enter the market. It acts as barrier to entry. For example: If you want to enter the car manufacturing industry:
  - You would have to produce a range of cars to compete in each of the sub-markets (niche markets);
  - Your cars would have to be different from all the other cars that are currently on the market;
  - You would have to advertise extensively to bring it to the attention of the consumers and to convince them to switch to your brand;
  - You would have to have huge amounts of money to do all of this; o Your product might be rejected by consumers anyway!

**Price discrimination** occurs when a seller charges different prices for the same product for different groups of people.

Examples: different prices for movie tickets for adults, children and pensioners.

## COLLUSION

- No business in an oligopoly can ever be sure about the policy and behaviour of its competitors, which means that they function in a very uncertain environment.
- In an effort to eliminate this uncertainty, they often collude.

**Collusion** is an agreement between oligopolists in the same industry about the prices they are going to ask and the quantities they are going to sell.

- It takes place when rival firms cooperate by raising prices and by restricting production in order to maximise their profits.
- The disadvantage of collusion is that it hurts the poor who cannot afford the high prices.

- By collusion, oligopolists hope to achieve the same advantages as monopolists.
- Collusion can be explicit (open, overt) or implicit (hidden, tacit).

#### **Explicit collusion (cartels)**

- Explicit collusion is open and happens when oligopolies formally meet to decide on prices and production.
- Explicit collusion is usually illegal.
- The Competition Commission investigates and evaluates these restrictive business practices.
- When firms are found guilty, they will have to pay heavy penalties.
- Cartels are economically unstable because there is a great incentive for members not to stick to the agreement and sell more than the quotas set by the cartel.
- If the members of the cartel decide to increase their prices to make more profits, then one firm can expand his market share by keeping his price the same, or by decreasing it.

A **cartel** is an explicit collusion agreement whereby oligopolists work together to fix prices and determine market share, advertising strategies and product development.

For example: The Organisation of Petroleum Exporting Countries (OPEC)

#### **Implicit collusion (price leadership)**

- Implicit collusion is hidden and unspoken collusion amongst firms.
- It is when firms act together to determine the price and the output, but they do it in such a way that it is very difficult to prove that they have colluded.
- Price leadership is the most general form of implicit collusion.

**Price leadership** is when one firm makes price decisions on behalf of the whole group of oligopolies. The price leader is normally the largest business in the industry. Sometimes it is the business with the lowest production costs. Other firms will follow the price leader's signal.

For example: one business announces that it plans to increase its prices. It hopes that the competitors will see it as a signal to also increase their prices.

Collusion is the most successful under the following conditions:

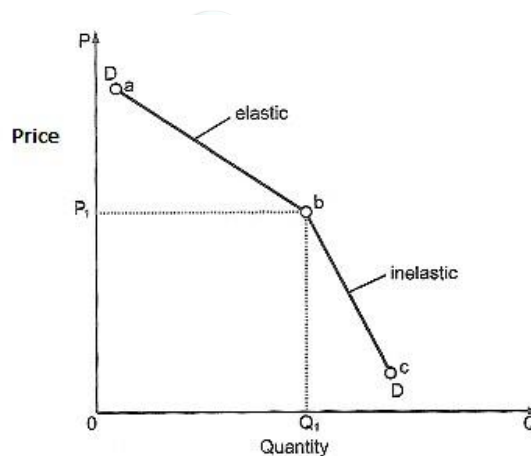
- When only a small number of firms are involved, which makes communication more effective;
- If firms face more or less the same cost of production;
- If the product is homogeneous;
- If there are barriers to entry;
- If the government does not interfere;

### **PRICES AND PRODUCTION LEVELS**

- Since there are many different forms of collusion between oligopolies, it is nearly impossible to predict how they will behave in terms of their pricing and production decisions.
- The outcome of their pricing and production decisions can be one of the following:
  - Due to collaboration they determine the price and output levels in the same way as a monopolist does and earn an economic profit.
  - They compete in terms of price and the outcome is the same as that for perfect competition.
  - They collude in such a way that the price, output and profit levels are between those that apply in a monopoly and those that apply in a competitive market.
  - Because it is difficult to build an economic model of collusion between firms, the outcome could be anything, so it is difficult to determine their behaviour.
- The exact price and production level of an oligopolist depends on what model of the market structure is being studied.

### THE KINKED DEMAND CURVE

- Due to the interdependence between firms, an oligopolistic firm faces a kinked demand curve as shown below:



- The equilibrium price is  $P_1$ .
- The kinked demand curve is based on the following:
  - When an oligopoly *increases* his price, its competitors do not follow. Consumers will rather buy from cheaper competitors. \*
  - This will cause the demand curve to be relatively elastic because the percentage change in prices will cause a larger percentage change in the quantity demanded. \*
  - On the graph above this is represented by the section of the demand curve between points (a) and (b).
  - When an oligopoly *decreases* his price, his competitors will all do the same. Any gains will quickly be lost. \*

- This will cause the demand curve to be relatively inelastic because the reduction in price will result in a smaller percentage change in quantity demanded.
- On the graph above this is represented by the section of the demand curve between points (b) and (c).
- The kinked demand curve contains two segments – one for higher prices that is elastic, and one for lower prices that is inelastic.
- An oligopoly has little to gain from reducing prices and much to lose from increasing prices.
- This is the reason why they are forced to keep their prices stable.

## **COMPARISON WITH PERFECT COMPETITION**

### **Prices**

- Prices are higher in an oligopoly than in perfect competition.
- Oligopolies have less competitors than perfect competition – since they can't compete with each other in terms of prices, they act jointly to determine price.
  - They always set a price that is higher than that in a perfect market.
  - Once the price has been set in the oligopoly, it is more stable than in perfect competition.
  - This is because the oligopoly is reluctant to change the price because it may initiate a price war.

### **Output**

- The oligopoly produces a lower output than perfect competition.
- It is difficult for a single firm to change its output because it does not know how other firms in the oligopoly will react.

### **Competition**

- Firms in perfect markets compete with price, but an oligopoly depends on non-price competition.
- It uses methods such as advertising, product differentiation branding and after-sales service.
- It is better for the oligopoly to cooperate than to compete.

### **Profit**

- An oligopoly enjoys higher profits than perfect competition.
  - The economic profit that the perfect market makes in the short-run attracts other businesses to enter the market in the long-run.
  - Whatever profit was made in the short-run is eliminated in the long-run.
  - The oligopoly maintains its economic profits in the long-run because it is difficult for new firms to enter the market.
  - The perfect market makes a normal profit in the long-run, but the oligopoly makes economic profit in the short- and long-run.
  - However, oligopolies use a large part of their profits for research and development in order to find better products and less expensive production methods.



- Efficiency o It is unlikely that an oligopolist will produce at the lowest point of the long-run average cost curve in the same way as producers under perfect competition do.
- The consumer therefore does not get the product at the lowest possible price.
  - o Perfect competitors are productively efficient when maximising their profits, but oligopolies are not.
  - o The price of the product in the oligopoly is higher than the marginal cost ( $P > MC$ ), which means that the community attaches greater value to the additional unit than the resources required to produce it.
  - o This indicates an ineffective application of resources and a loss of welfare.
- For the perfect competitor,  $P = MC$  when profits are maximised.
- Perfect competitors are allocatively efficient, but oligopolists are not.



## MONOPOLISTIC COMPETITION

### DEFINITION

- Monopolistic competition is more realistic than perfect competition or pure monopoly.
- Monopolistic competition has the characteristics of both monopoly and perfect competition.
- The most distinguishing feature is that the products of various firms are different, despite being close substitutes for each other. Products are therefore differentiated.
- Under monopolistic competition there is freedom to enter and to exit the market.
- **Monopolistic competition** is a market structure in which many sellers each produce similar, but slightly differentiated products.
- There are examples of monopolistic competition in the clothing and shoe industries and the take-away and restaurant industries.

### GENERAL CHARACTERISTICS

#### **Relatively large number of sellers**

- Monopolistic competition consists of a relatively large number of sellers, who are typically small businesses.
- There is a lot of competition between different firms and no business has total control over the market.
- Monopolistic competitors face downward-sloping demand curves – but the demand is more elastic than in a monopoly as consumers have a choice of many products that are good substitutes for each other.
- They do not produce perfect substitutes but their products are close subs

#### **Influence over price**

- Competition does not take place through prices, but through differentiated products.
- As products are close substitutes for each other, any reduction in price will attract customers from rival firms.
- A decrease in price will cause an increase in quantity demanded.
- This implies a downward-sloping demand curve with marginal revenue that will be less than price.
- No firm can fix the price, but has some influence over it.
- A firm can increase the price by selling less or decrease the price by selling more.
- A firm will choose the price-quantity combination where profits are maximised.

#### **Differentiated products**

- Product differentiation has three dimensions:
  - **Products are not identical:**
    - Products are similar but not totally identical.
    - The similarity lies in the fact that they satisfy the same consumer need.

- Examples are the huge variety of men's and women's clothing, shoes, beauty products, wine, toothpaste and furniture.
- Products differ only slightly and are close substitutes for each other.
- Prices can't be very different from each other.
- Sellers promote their products as unique through advertising.
- The buyers react on these differences and will stick to a certain brand.
- **Differences may be imaginary:**
  - Differences are sometimes completely imaginary, for example medicines which may have the same ingredients but different brand names.
  - The differences between producers could also be based on the opinion of consumers that one brand is better than another brand.
  - In some cases it is merely the service of the seller that differentiates its products from that of the competitor.
  - Real or physical differentiation is achieved by making changes to the physical aspects and appearance of the product – different materials, design and colours are used.
  - Further differentiation can be achieved through sales conditions, business location, customer service and the level of professional service.
- **Differences in packaging:**
  - Even the packaging of a product can make it different from other similar products.
  - For example sugar and salt.

### **Exit and entry are relatively easy**

- Exit and entry are relatively easy when compared to monopolies and oligopolies.
- There are no barriers, legal, natural or otherwise, that hinder the producer or consumer from entering the market.
- If a new producer enters the market, the market will adjust until the economic profit is zero again.
- This implies that monopolistically competitive firms can make economic profit or losses in the short run, but only normal profits in the long run.
- Lured by the profits of existing firms, new firms can enter the industry and consequently market output will increase.
- New competitors mean that there will be new brands of the same product.

### **It is a hybrid (compound/composite) market structure**

- Monopolistic competition has characteristics of both perfect competition and the monopolist.
- The element of competition stems from the fact that there are many sellers of the differentiated product and that each is relatively small in relation to the market as a whole.
- The fact that businesses can freely enter or leave the market in the long run also contributes to the element of competition.

- The monopoly element is the result of product differentiation. Every monopolistically competitive firm has a certain degree of market power and is actually a mini-monopoly in the sense that it is the only producer of that specific brand of the product.

#### **Often it is local**

- Monopolistic competition occurs often in the retail and services sector of the economy.
- At local level there are numerous examples of monopolistic competition – pharmacies, grocery stores, hairdressers, restaurants, fast-food outlets and liquor stores in urban areas.
- Each of these enterprises has a certain degree of monopolistic power over its competitors because of the uniqueness of its product, or more favourable location, slightly lower prices etc.
- This monopolistic power is not strong because of the availability of close substitutes.

#### **Diverse businesses**

- Because of product differentiation, we cannot derive supply and demand curves for this industry in the same way as perfect competition.
- A single equilibrium price cannot be determined for the differentiated product because a range of prices will apply.
- The focus in graphs will not be on the industry but on the typical business.

### **NON –PRICE COMPETITION**

- Because products are differentiated creates the opportunity for each business to increase the demand for their product through marketing campaigns and product variation.
- Non-price competition occurs when a seller decides not to focus on price but instead promote their product's features.
- They can focus on quality, promotion, packaging, location or any other factor to promote their product.

#### **Focus on good health:**

- Producer can reduce the sugar content and increase the fibre content of their breakfast cereal to make it more attractive to consumers that are health conscious. The advertising campaign will then target health-conscious people.

#### **Focus on superiority:**

- Even though ingredients between two brands are exactly the same, the producer can suggest through advertising that his product is the better one.

#### **Product differentiation:**

- Producers will try to differentiate their product from the competitor's – the bigger the difference, the less elastic the demand. Demand for the product can increase if they can make their product better.

### **Methods of non-price competition**

### **Branding:**

- ❖ Branding is a marketing tool that the firm can use to create a certain perception in the minds of its customers of the product and also of the company.
- ❖ Branding plays a very important role in monopolistic competition. o Every producer will try to build brand loyalty with their customers so that their customers will choose their brand over any other.
- ❖ Large chain stores like Checkers, Pick 'n Pay and Woolworths often have their own brands of washing powder, dog food, cleaning materials etc.
- ❖ These brands are often exactly the same as other brands (even coming from the same factory) but it is up to customers to decide which brand they prefer.

### **Advertising:**

- ❖ Information can be provided by the firm about the product or business itself through media such as television, radio, internet and magazines.
- ❖ The purpose is to increase sales and profit.
- ❖ Advertising can be used to differentiate the firm's product and also to gain market share.

### **Packaging:**

- ❖ Packaging is the best way the product is presented to the market. o It is very important that the consumer find the packaging appealing.
- ❖ Packaging not only protects the product, but can also provide information about the product it contains.

### **Service:**

- ❖ The idea is to provide excellent service to customers so that customers will want to come back. o People often go back to the same restaurant if they enjoy the food, and if the service is good.
- ❖ If customers have a bad experience, very often they will not go back. They will also discourage other people to go there.

### **Information:**

- ❖ Providing information to customers is very important – there are many other businesses in the industry, and customers will generally support the firm that provides the best and most persuasive information.

### **COLLUSION**

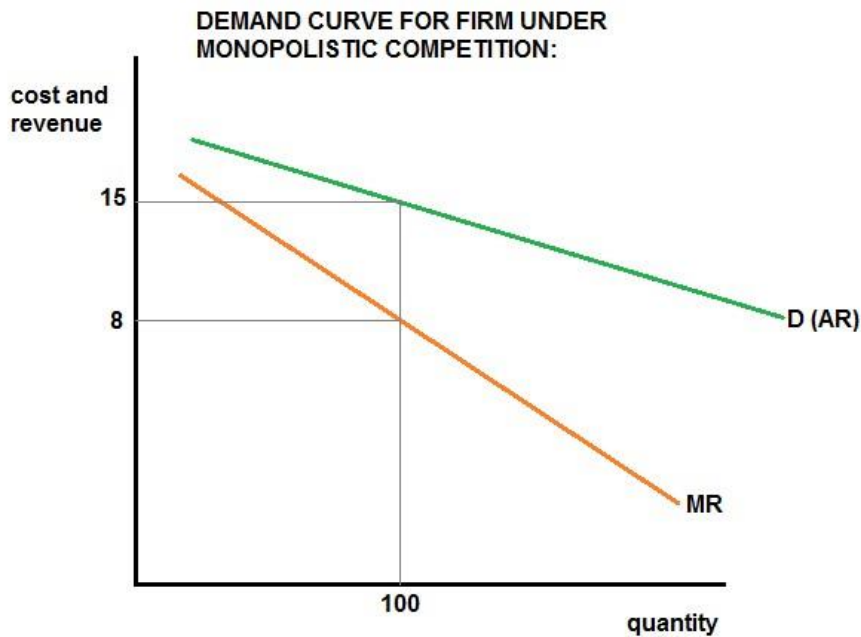
- Because there are so many different firms in this market structure, collusion is virtually impossible.
- Price fixing is generally not found in this market structure.

### **PRICES AND LEVELS OF PRODUCTION**

#### **The demand curve:**

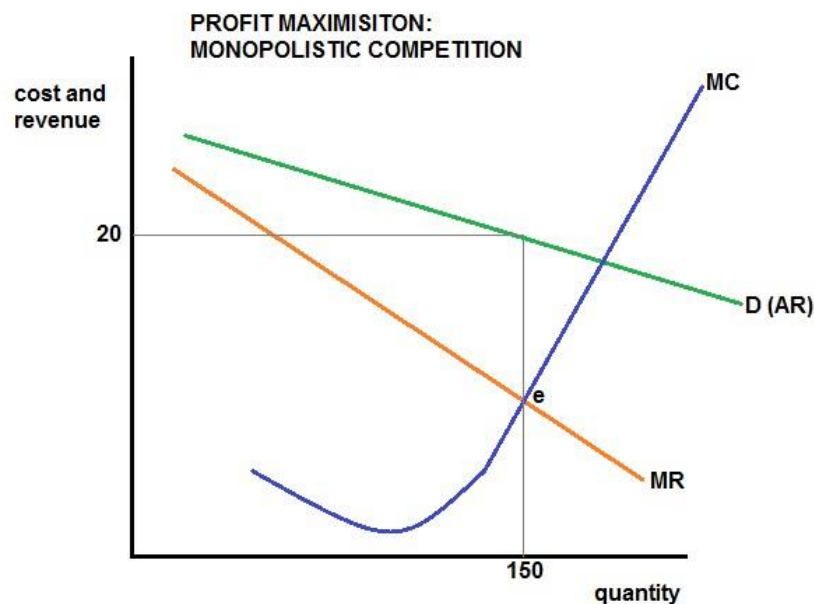
- Firms under monopolistic competition are price makers.

- Each individual firm has their own downward-sloping demand curve for their own differentiated product. It is impossible to construct a market demand curve, because products are not homogeneous.
- The demand curve for the firm under monopolistic competition is more elastic than the monopolist's demand graph, because it does face competition from other firms in the industry.
- The demand curve and average revenue curve is the same, and the marginal revenue curve is below the demand curve.



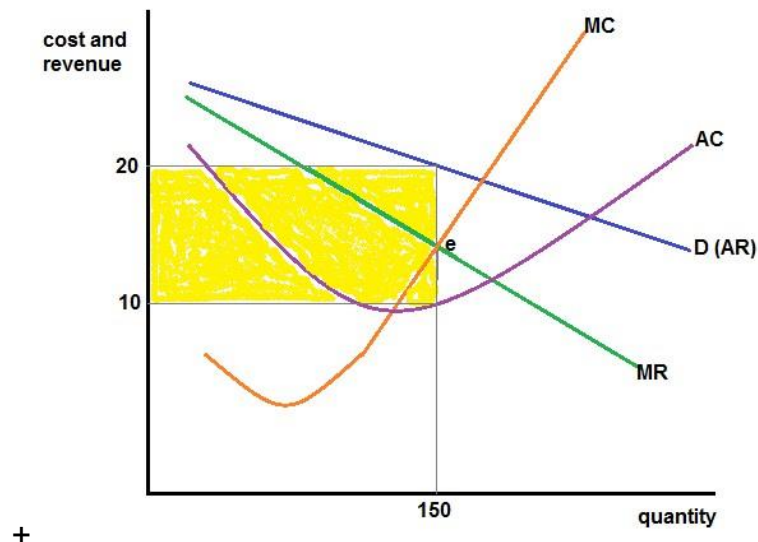
**Profit maximisation:**

- The shape of the cost curves are exactly the same under monopolistic competition as it is under any other market structure.
- Profit maximisation is also where  $MC = MR$ .
- The firm will sell 150 units at a price of R20.

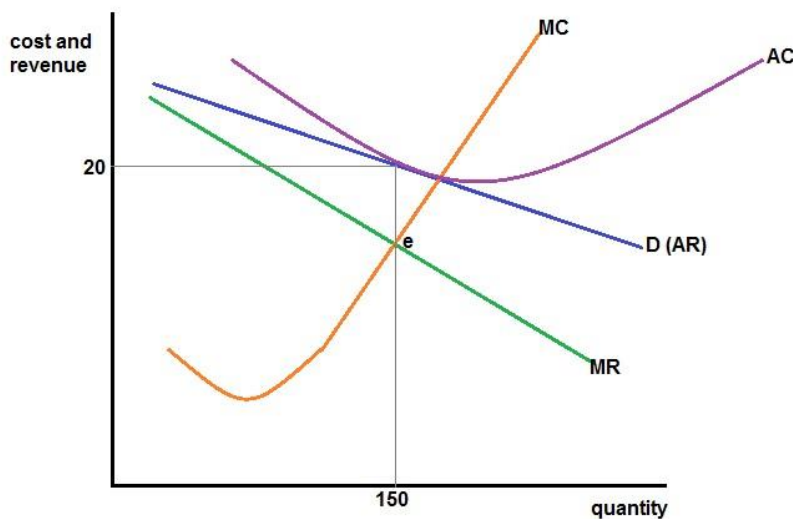


**Short Run price and output:**

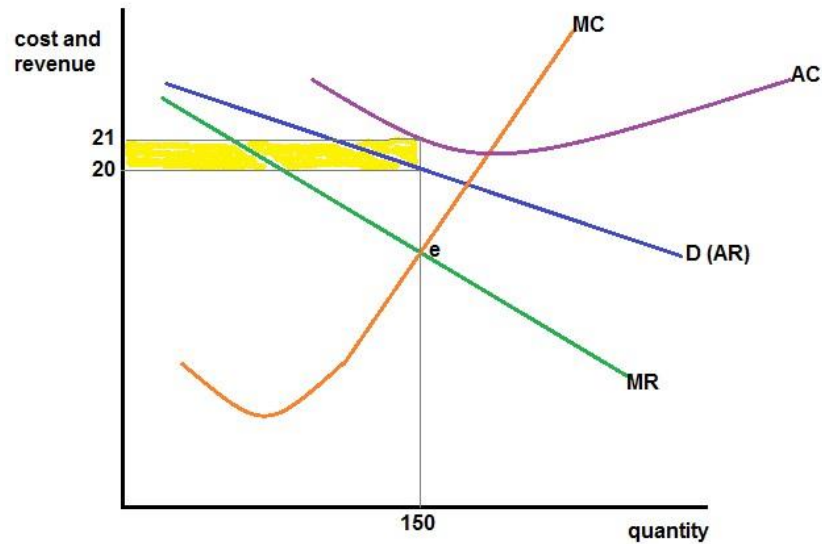
- In the short run the firm under monopolistic competition can make a normal profit, economic profit or economic loss:
- If the AC curve is UNDER the AR curve, the firm will make an economic profit.
- $AC = R10$  and  $AR = R20$ .
- $AR > AC$  therefore this firm is making economic profit of R10 per unit.
- Economic profit is indicated by the shaded area.



- If the AC curve is tangent to the AR curve, the firm will make a normal profit.
- $AC = AR = R20$

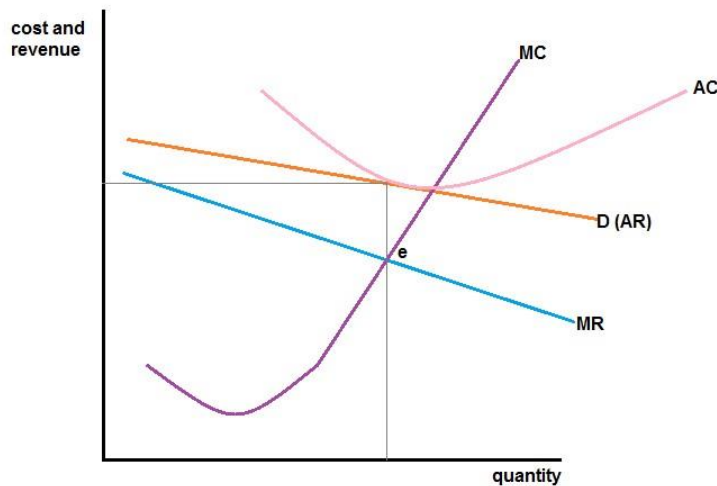


- If the AC curve is ABOVE the AR curve, the firm will make an economic loss.
- $AC = R21$  and  $AR = R20$ .
- $AR < AC$  therefore an economic loss of R1 per unit is being made.
- Economic loss is indicated by the shaded area.



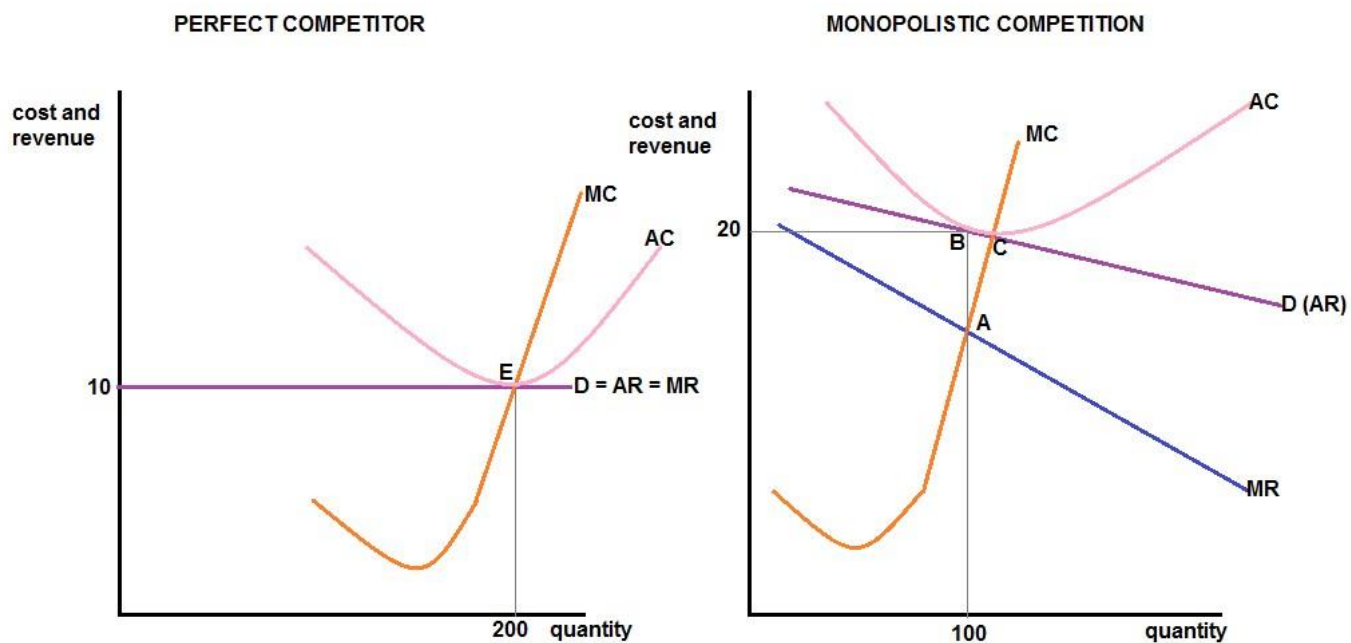
**Long Run price and output:**

- Entry into the industry is fairly easy, as there are no barriers to entry.
- If any of the existing firms are making an economic profit, this will attract new competitors into the industry.
- This will increase the competition in the industry and the new firms will take some of the customers away from existing firms.
- This will decrease the demand for the firm's product.
- The demand curve as well as the marginal revenue curve will move to the left and because there are even more substitutes, the curves become more elastic.
- This process will continue until all firms are making only normal profits and there is no more reason for new firms to enter.





## COMPARISON WITH PERFECT COMPETITION



- In order to make a comparison between two individual producers in the two different market structures, we assume that both businesses are the same size and have the same cost structure.

### Profits:

- Both market structures are characterised by freedom of entry and exit.
- Any economic profits made in the short run, will disappear in the long run as new firms enter the industry.
- In the long run in both firms their average cost will equal their average revenue.
- Both firms will make normal profits only in the long run.
- There is no difference in terms of profits between perfect competition and monopolistic competition.

### Price:

- In the graph above, the perfect competitor maximises profits at point E where  $MC = MR$ .
- The price that will be charged in the perfect market is R10
- Under monopolistic competition, profits are maximised at point A where  $MC = MR$ .
- The price that will be charged under monopolistic competition is R20.
- In comparison with a perfect market, under conditions of monopolistic competition, the price paid by the consumers will be higher.

### Output:

- At profit maximisation point the perfect competitor will produce a quantity of 200 units in the graph above.
- At profit maximisation point under monopolistic competition the firm will produce a quantity

of 100 units. o In comparison with a perfect market, under conditions of monopolistic competition, the output will be less.

**Efficiency:**

- o At profit maximisation point the individual producer under perfect competition is producing at the lowest level of the AC curve, and is therefore productively efficient.
- o At profit maximisation point under monopolistic competition the producer is not producing at the lowest level of his AC curve – point B is slightly higher than point C (which is the lowest point of AC).
- o Under monopolistic competition, the producer is therefore not productively efficient when maximising profits.



## MARKET FAILURE

### THE CONCEPT OF MARKET FAILURE

- A market failure occurs when the forces of demand and supply do not ensure the correct quantity of goods and services are produced to meet the demand at the right place.
- **Market failure** means that the market has not achieved its optimal production outcome – it has not produced the correct quantity of goods and services.
- It means that the best outcome has not been achieved – if goods are under-produced it will lead to scarcity; if goods are over-produced it results in surpluses.
- Not everyone benefits from the free market equally.
- A market is allocatively efficient when firms in each industry use the available resources to produce the output most demanded by consumers.

### Inefficient allocation of resources

- In a free market, prices are determined by demand and supply without outside intervention. When this price and quantity is deemed to be too high or too low, the market has failed.
- An efficient allocation of resources results in the following:
  - The correct quantity of goods and services are made available – there are no shortages or surpluses;
  - Everyone who needs the goods has access to them and nobody is excluded;
  - The price of the goods is acceptable – not too low, not too high;
  - There has been no wastage in the production process – costs have been kept to a minimum;

## REASONS FOR MARKET FAILURE

### EXTERNALITIES

• An externality occurs when some of the costs and benefits of a decision or action are borne or enjoyed by second or third parties who were not part of or directly involved in the decision making.

- It is also called spill-over effects or neighbourhood effects.
- The four basic cost and benefit concepts:

#### **Private cost:**

- Internal costs are known as private costs.
- These are the usual costs that consumers incur when they buy goods, for example the price they pay for a product.
- The private costs of the business are their fixed and variable costs – their day-to-day expenses.

#### **Private benefits (internal benefits):**

- ❖ These are the benefits gained by those who buy the goods and those who produce the goods.
- ❖ For the consumer it includes the convenience of enjoying the product, and for the producer it includes the revenue and profit it receives from selling the product.

### Social costs:

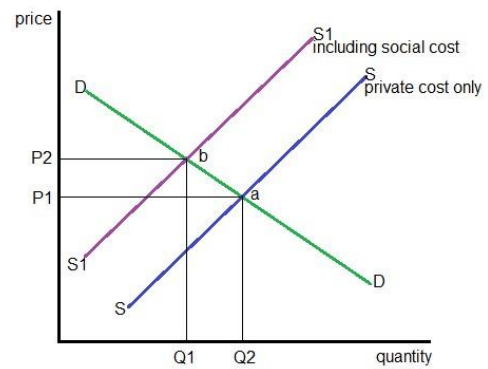
- ❖ These are the cost of goods or services to those who create them and to society in general.
- ❖ It includes the production cost, but also the additional cost of pollution and the waste products (external costs – negative externalities).
- ❖ No values are given to these extra (external) costs because no market exists to price them.
- ❖ Private costs plus external costs are equal to social costs.
- ❖ Consumers pay for private benefits.
- ❖ However, society in general benefits from less diseases, a healthier workforce can work more productively and is absent from work less (external benefits – positive externalities).
- ❖ When municipalities provide clean water to households, households pay only for the private benefit.
- ❖ Private benefit plus external benefits are equal to social benefits.
- ❖ Because externalities in production and consumption often exist and output is usually based on private cost and benefits, this is a cause of market failures.

### Negative externality

- If the externality imposes a cost on a second party, it is known as a negative externality.
- Smoking is an example of a negative externality – when a person smokes he unintentionally harms the health of those around him.
- The smoker does not pay compensation to the people who inhaled the second-hand smoke and developed lung problems.
- Other examples of negative externalities: *Pollution from factories; Noise from airports; Traffic congestion and damage to the roads from cars;*
- The cost of the negative externality is not included in the market price of the good.
- When a profit maximising firm calculates its production cost, it only takes into account the private cost of production, and not the social cost of production.
- Given that the private cost of production is lower than the social cost of production, the market price turns out lower than what it should be if the social cost was included also.
- Because the costs are lower, the consumption and production will be higher than it would have been if the social cost was included.

The graph shows a negative externality:

- At point (a) the price is P1 and the quantity is Q2. This represents private costs.
- If it was possible to calculate and include social cost, these would be added to the private cost.
- If consumers paid the “full” cost of production, equilibrium would be at point b, resulting in a higher price and lower quantity.



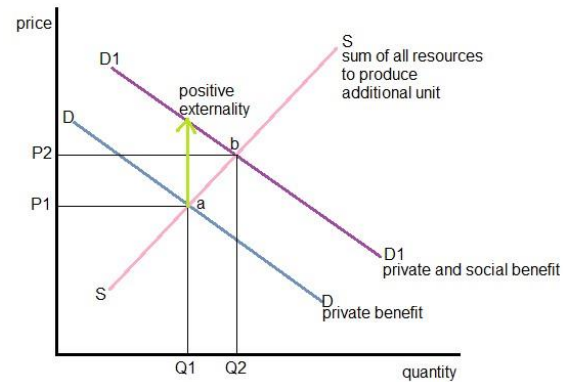
**NB:** If a firm has to take external cost into consideration, it will increase his production cost, and this is why the supply curve decreases and moves to the left.

### Positive externalities

- Positive externalities occur when a benefit is enjoyed by a second or third party from the action or decision of another party.
- For example if I put a pot plant in my classroom, I give pleasure to those that visit my classroom because it makes the classroom look better.
- But the learners don't pay for enjoying the pot plant.
- Other examples of positive externalities are:
  - Inoculating small children against certain diseases help us all to stay disease-free;
- Education creates a more productive workforce;
  - A beautiful garden raises the value of your property and those around you;
- If the decision of how much is to be supplied is left to the market, the market will tend to undersupply goods and services that have a positive externality.

An under consumption of these goods takes place because the market only takes the private benefit and not the social benefit into account.

- The graph shows a positive externality:
  - If only the private benefits and costs are taken into account, equilibrium would be at point (a) at a price of P1 and quantity of Q1.
  - When we take into account the social benefits, our demand will increase and equilibrium would be at point (b) – the price would be higher but more would be consumed.



- When we decide to go to the doctor or buy goods that are healthy for us, we do not consider the external benefits. This is why beneficial goods are under-consumed – the external benefits cannot be realised.
- If would benefit society if more people get flu vaccination before winter – when people realise the external benefit (less people away from work, less pressure on the health care system) they might increase their demand – graph shifts to the right.

## MISSING MARKETS

- Markets are often incomplete in the sense that they cannot meet the demand for certain goods.

They are bound to fail.

### a) Community goods

- These are goods such as defence, police service, prisons, street lightning, flood control, storm water drainage and lighthouses.

### b) Collective goods

- These are goods such as parks, beach facilities, streets, pavements, roads, bridges, public transport, sewerage systems, waste removal and refuse removal.

### c) Public goods

- Community goods and collective goods are known as public goods.
- Public goods have two characteristics:

#### **Non-rivalry:**

✦ Consumption by one person does not reduce the consumption by another person.

✦ Consumption of a service cannot be confined only to those who paid for it – this leads to the free-riding problem.

- Public goods can cause market failure because the free market does not want to supply these goods.
- Public goods are not provided by the price mechanism (the market) because producers cannot withhold the goods for non-payment and since there is no way to measure how much a person consumed, there is no basis for establishing a market price.

- A failure to supply public goods would mean we are less well-off. Allocative inefficiency will occur.

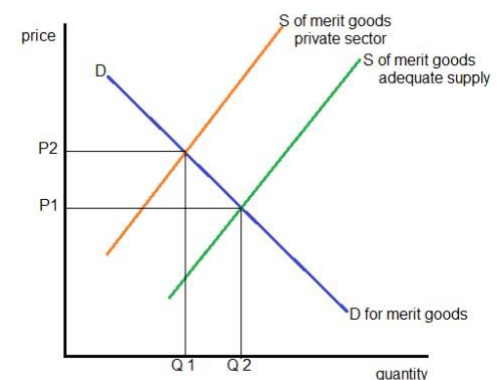
### Merit and demerit goods

- While the market is willing to supply both merit and demerit goods, it tends to undersupply merit goods and oversupply demerit goods.
- The reason for this is that the market only takes the private costs and benefits into account, and not the social benefits and costs.

### Merit goods:

- Merit goods are goods that society deemed good for us, since an increase in its use increases the welfare of the nation.
- Some goods that are highly desirable for the general welfare of the people in the country are not highly rated by the market.
- Market forces do not reflect the full value of merit goods, because the market only takes into account the private benefits and not the social benefits.
- In a market system, the private benefits that consumers get from merit goods would determine what consumers are willing to spend on these goods.
- If people had to pay market prices for these goods, relatively little would be consumed.
- Merit goods are profitable enough to be produced by the private sector – however, they are only produced for those who can afford them and is therefore supplied in insufficient quantities.
- In this sense, the market fails.
- For this reason the state provides merit goods instead of or in addition to private provision.
- Examples of such goods are healthcare and education, skills training, safety, inoculations and car seat belts.
- People do not like to spend a lot of money on the prevention of illnesses.
- Few people would pay for education if they had to meet the full cost.
- The following graph illustrates the problem of under-provision of merit goods:

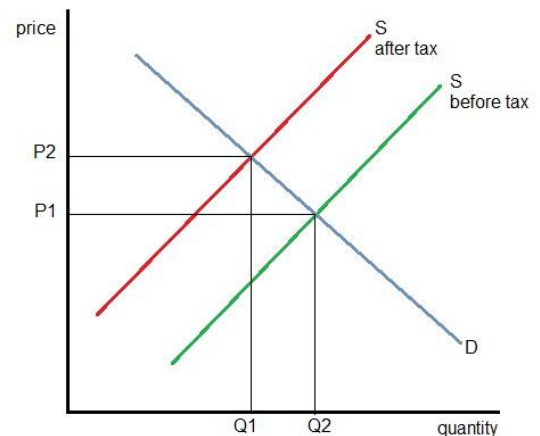
- When it is left to the private sector to supply merit goods, it will only provide  $Q_1$ . The price will be  $P_2$ . Only people willing to pay this high price will have access to the merit good.
- In order to meet the needs of society, output needs to be at  $Q_2$ . If private firms could be convinced to supply at this level, the price would drop to  $P_1$ , making it more affordable to people and welfare can improve.
- Private firms are not often convinced to do this, which is why the state has to provide merit goods.



- Demerit goods:
- Demerit goods are regarded as bad for us and we should use less of these goods.
- Items such as cigarettes, alcohol and non-prescription drugs are examples of demerit goods.

- In a market economy these goods are over-consumed. Some consumers might be unaware of the true cost of consuming them (their negative externalities).
- The price does not reflect the product's external costs – in real terms the product costs society more than its selling price.
- Government can ban their consumption or reduce it by means of taxation and regulation or by providing information about their harmful effects.
- The following graph shows how the consumption of demerit goods can be reduced by imposing a tax:

- If consumption is left to the market, the quantity produced and consumed would be Q2. The price would be P1.
- If the government wants to reduce the production and consumption of demerit goods, they will impose a sin tax.
- Taxes increases the production cost of the producer, so his supply curve will decrease.
- The price increases to P2 and output will decrease to a more acceptable level (Q1)



### IMPERFECT COMPETITION (NON-COMPETITIVE MARKETS)

- Under certain conditions, a perfectly competitive market will reach a point of allocative efficiency. Firms produce the right product at the right price and the right quantity and do it efficiently since only efficient firms will survive.
- In market economies, competition is impaired by power. Power lies with producers more than with consumers.
- Most businesses operate under conditions of imperfect competition – this allows them to restrict output, raise prices and produce at levels where price exceeds marginal cost.
- The result is an inadequate allocation of resources, as only those that can afford to pay gain access to certain goods and services.
- Under imperfect competition, market failure occurs because imperfect markets fail to achieve technical and allocative efficiency.
- The following **factors** cause imperfect competition:
  - Modern markets do not cater for price negotiations – consumers have to pay the prices that producers ask.
  - Advertising promotes the superiority of certain producers.
  - Barriers prevent new businesses from entering into markets – full adjustments to changes in demand are prevented.
  - The introduction of new, improved products is delayed – for example the technology to produce cars not powered by fossil fuels is already available. But the oil-producers and lack of capital delay the process.

### LACK OF INFORMATION



- **Asymmetric information** – buyers and sellers do not have access to the same information.
- **The principal-agent problem** – arises when one party (the principal) in a transaction has more information than the other party (the agent) and may use this information to benefit from the transaction.
- Producers and consumers base their decisions on the information they have.
- Incomplete or inaccurate information leads to the wrong decision being made and a waste of resources will occur.
- This is a common problem in the markets for second-hand goods, where consumers may not be aware of the market price and pay more than necessary.
- Advertisements can also play an important role in imperfect information. Consumers base their decisions on misleading information, which is designed to generate a desire to buy a product.
- If producers know more about the market than buyers, it can create a situation where buyers can be exploited. Producers or sellers give out information to buyers to convince the buyers that the goods and services are needed.
- Some producers may even use their knowledge of market conditions to block the entry of new participants into the market.

**Consumers:**

- Although advances in technology increase the amount of information to which people have access, they obviously do not have perfect information.
- Consumers might not know that the price of a product is lower from some other supplier or about the harmful effects of certain products.

**Workers:**

- They need information about all job opportunities and benefits to ensure that they use their labour effectively.
- However, they may be unaware of job opportunities outside their current employment.

**Entrepreneurs:**

- They may lack information about the costs, availability and productivity of some factors of production and may be operating on the basis of incorrect information.
- Producers may not be aware of all the technology and production techniques that are available or the different resources that can be used.

**IMMOBILITY OF PRODUCTION FACTORS**

- For the market to be able to make efficient use of resources it must be able to transfer resources from one use to another.
- Most markets do not adjust rapidly to changes in supply and demand, because most resources are not very mobile.

**Labour:**

- Labour may take time to move into new occupations and geographically to meet the changes in consumer demand.

Relocation of labour from one area to another is problematic because of family ties, schools, housing etc.

Workers are reluctant to change to another job – the worker has to give notice, must find a place to stay in another geographical area. This means supply of labour will not always meet the demand for it.

- Unskilled people are not able, willing or do not always have the time or money to gain the skills they need. This causes unemployment or employment at low salaries.

#### **Physical capital:**

- For example factory buildings and infrastructure such as telephone lines, bridges, rail links and airports.
- Physical capital takes a long time to install. o It then lasts for a long time, but cannot be moved to fit a change in demand. o Capital used in a nuclear power station cannot easily be converted for use in a hydroelectrical plant.

#### **Technological applications change production methods:**

- Technology may change, for example using robots instead of labour. o But it takes time for industries to adapt. o With greater technological change there is an increasing need for workers to be flexible, to be willing to update their skills throughout their working life, and to change employment, occupations and work patterns.

### **IMPERFECT DISTRIBUTION OF INCOME AND WEALTH**

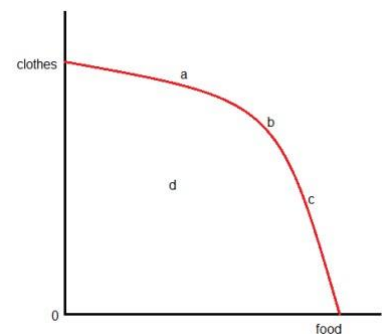
- The market system tends to distribute income and wealth unevenly.
- Since the market is interested only in producing goods for those who can afford it, the unequal distribution of income leads to the fact that few people have too many goods and many have too few goods.
- Due to a lack of skills, education and imperfect information, certain individuals are unable to earn incomes that are necessary to achieve a decent living standard.
- Low incomes lead to an inability to accumulate wealth.
- If the initial distribution is unequal, the final distribution will be unequal too.
- The market fails to ensure that everyone in society gets equal access to the output of the economy.
- Too many resources are used to produce output for the rich members of society, and too few for those that are poor.
- This is caused by factors such as:
  - o Difference in market power;
  - o Initial distribution of wealth;
  - o Unequal access to markets and educational opportunities;
  - o Discrimination;

## CONSEQUENCES OF MARKET FAILURES

- When markets fail there will most likely be three consequences: inefficiencies will occur, there will be spill-over effects, and government will intervene.

## INEFFICIENCIES

- Two kinds of inefficiencies are possible because of imperfect markets.
- In most instances' consumers pay prices that are too high.
- In other instances, the goods are available but not in the quantities required by consumers.
- **Productive inefficiency:**
  - This means that a business does not produce goods at the lowest possible cost.
  - There is room to reduce costs without producing fewer goods or without producing a lower quality product.
- **Allocative inefficiency:**
  - This means that the product mix does not reflect consumers' tastes and therefore resources are not allocated in the right proportions.
  - The quantities required by consumers are not available. ○ Supply does not correspond with demand – the business could have used its resources more efficiently to make products that consumers value more.
- Even if a market is technically efficient it can still fail if it produces the wrong combination of goods and services. The market will be technically efficient, but allocatively inefficient.
- The concepts of technical efficiency and allocative efficiency and the difference between them can be explained with the aid of a production possibility curve.
- A point like point d indicates technical inefficiency since it is possible to produce a higher level of clothes and food as indicated by points on the PPC (like points a, b and c).
- Points a, b and c indicates technical efficiency but not **necessarily** allocative efficiency. Allocative efficiency would require that the right combination of food and clothes be produced so that all needs could be satisfied.
- If the market economy produces a combination of food and **clothes** as indicated by point a, but the combination desired by the community is at combination c, then allocative inefficiency exists.
- In South Africa government uses competition and anti-collusion laws.
- If South Africa is producing at point d on the PPC, the removal of market imperfections and the better use of resources will have the effect that the production possibility curve moves to the right – to points a, b or c.
- At every point on the PPC more services and more goods will be produced.



## **Pareto efficiency:**

- Pareto efficiency refers to the situation where resources cannot be reallocated to make one person better off without making another person worse off
- Pareto efficiency does not necessarily mean a *fair* allocation of resources.
  - For example if one person owns all the resources and everybody else owns nothing, this situation will be considered Pareto efficient. If one resource was taken from the original owner, he would be worse off to make somebody else better off.
  - Pareto improvement takes place when resources are reallocated in a way that makes one person better off without making anyone else worse off.
  - For example if an airport is built it would provide advantages to society, but it will disadvantage people living nearby. If they are compensated for the inconvenience however, it is possible to have Pareto improvement.
- The same applies to land redistribution – if a fair price is paid by government to the owners, the new owners are made better off without making the old owners worse off.

## **EXTERNALITIES**

### **Negative externalities:**

- The consequences of negative externalities are that they reduce the welfare of society.
- Negative externalities are things like exhaust gas pollution, tobacco smoking and alcohol abuse.
- Part of the cost associated with the use of such items is not paid by the producers but by society, such as smoking.
- There is a definite link between smoking and a range of illnesses.
  - Treatment of these illnesses is a cost to public and private healthcare services – an external cost on top of the private cost, which is the cost carried by producers.
- The consequences of market failure are that the market produces too much of the products that have negative externalities, at prices that are too low.
- The government will commonly use taxes, subsidies and regulation to deal with externalities:

### **Taxes on the output produced:**

- ✦ Aim is to impose a tax that is equal to the external cost of the pollution.
- ✦ In this way the factory is forced to pay the full cost of production.
- ✦ This has the effect of reducing the supply.

### **Taxes on the amount of pollution produced:**

- ✦ Government taxes the firm for every unit of pollution it creates.
- ✦ By imposing a tax, the government makes it more expensive for the firm to produce output and the firm is encouraged to use less technology resulting in less pollution to produce its output.
- ✦ Such taxes are known as green taxes.

### **Regulations:**

- ✦ Government could require firms to fit anti-pollution equipment that cleans the by-products before they are exposed of.

**Positive externalities:**

- Positive externalities improve the welfare of society. ○ Positive externalities are things like health care and education.
- When consumers decide how much to buy and how much they are willing to pay, they only take into account the private benefit and private cost.
- If it was possible to quantify the external benefit associated with these goods, the social benefit would be included in the demand curve, which will make the demand increase. More would be produced.

The consequence of the market failure is that the demand is too low for the products with positive externalities. People demand and consume too few of these goods.

**STATE INTERVENTION**

- When markets fail, intervention is required. The only institution capable of intervening successfully with market failure is the government.
- The purpose of government intervention is to ensure that the right quantity of resources is allocated to the production of output so that society as a whole maximises its benefit from consuming all the different goods and services.
- In other words, government intervenes with the aim of achieving allocative efficiency.

**Rules and regulations**

- Government uses different methods of regulation as a means of controlling markets.

**Direct controls:**

- Government can choose to pass laws or use the existing legislative framework in an attempt to control and constrain the behaviour of businesses and industries, and individuals who generate negative externalities.
- The emissions of potentially dangerous chemicals, air and scenic pollution, environmental preservation etc. are controlled by various laws and regulations.
- Advertising in the tobacco industry is prohibited and alcohol may not be sold on Sundays.
- The government can also use regulations to prohibit the production and consumption of demerit goods such as addictive drugs and child pornography.
- The government usually also deals with the problems of imperfect information by means of regulations designed to ensure greater access to information:
  - The government can require firms to disclose information about their operations so that shareholders have better information.
  - Government also require firms to disclose information about their products – e.g. goods and pharmaceutical companies must provide details about their products on their packaging.
  - Sometimes government provides the information themselves – e.g. cigarettes carry a government health warning.

- In other instances government require firms' products to meet certain standards – e.g. cars must satisfy certain safety standards set by the government.
- The SABS regulates standards in South Africa – all firms must produce goods that meet with certain health, safety and quality standards.
- Regulations for advertising exist to prevent false claims and deceptive advertising.

• **Imperfect markets:**

- Businesses operating in non-competitive markets maximise their profits by supplying less than the optimal quantity of the good or service at too high a price.

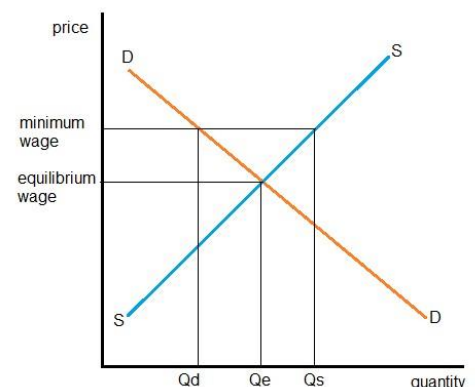
Governments have various instruments they can use to correct or limit the allocative distortions resulting from non-competitive markets.

The main instruments the South African government uses are:

- Competition from abroad – in some instances only foreign competition has the capacity to restrain the harmful practices of local monopolies.
- Removal or reduction of tariffs - in some instances has rendered local markets more competitive, as in the case of agriculture.
- Promoting competition through introduction of Competition Policy – government established Competition Commission, Competition Tribunal and Competition Appeals Court to ensure the level of competition is enhanced.
- Taxing the firms' economic profits.
- Imposing price controls (maximum prices), thus reducing the firms' economic profits and ensuring that more people are able to consume the product.

• **Minimum wages:**

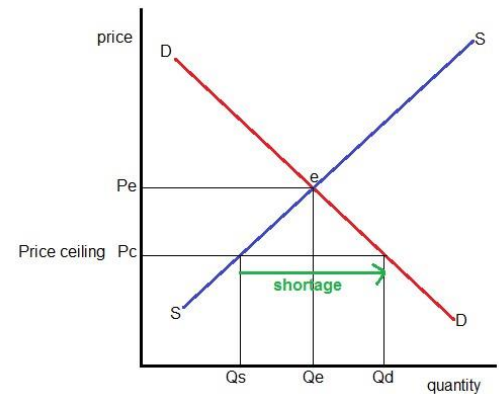
- Some argue that the application of minimum wage laws is needed to enforce a redistribution of income.
- Workers, particularly unskilled workers, are at a disadvantage in negotiating their conditions of employment with their employers.
- As a result, they are unable to secure real wage increase, and their wages remain relatively low and unfair income distribution is made worse.
- The South African government introduced labour laws which require employers to pay minimum wages (and other salary items such as UIF contributions) to their workers.
- Once a year, government announces an increase in these wages.
- Domestic workers and farm workers are protected by these laws.
- Minimum wages will improve the distribution of



Income (higher wages) but employment will fall.

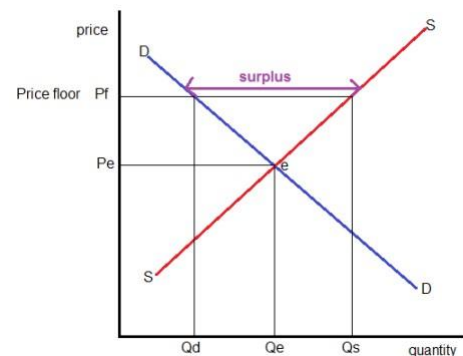
• **Maximum prices:**

- Sometimes government will set the price of a product at a maximum level that is below the market price.
- Government intervenes and passes a law that suppliers may not charge more than the maximum price.
- The immediate effect is that the quantity supplied drops.
- The shortage caused by the price ceiling creates a problem of how to allocate the goods because there are more consumers wanting the goods than there is available.
- Regardless of how the government solves the problem of a shortage, black markets will develop.
- A maximum price reduced the price for the consumers, but it reduces the quantity available.



• **Minimum prices:**

- Governments intervene to ensure that there are high enough quantities of basic foodstuff, such as maize.
- Their usual approach is to set the prices of staple food products at minimum levels. ○ This makes it worthwhile for farmers to produce such goods in the desired quantities.
- Maize and wheat are staple foods and before 1994 farmers were guaranteed minimum prices for these two products.
- Minimum prices do have unwanted side-effects like oversupply. ○ Surplus production is typical of minimum prices and how to get rid of it, is a big problem:
  - It could be dumped or sold below cost in a foreign country (this is prohibited by the WTO).
  - It can be destroyed.
  - It can be used as animal fodder. ○ A fixed minimum price has the effect that producers receive a higher price (Pf) but it creates a market surplus.



**b) Taxes and subsidies**

- There are two opposing approaches:
- **Levying of taxes:**

- The appropriate way for government to intervene in the markets is by levying a tax as a method to recover the external cost.
- It does this because society feels that demerit goods are over-produced and overconsumed.
- The effect of the tax is to raise the cost of production of the firm, which will cause the supply curve to shift to the left (decrease).
- A tax would raise the price and production would decrease. Less demerit goods are now produced and consumed.
- Sin taxes or excise duties are levied on demerit goods such as cigarettes and alcohol.

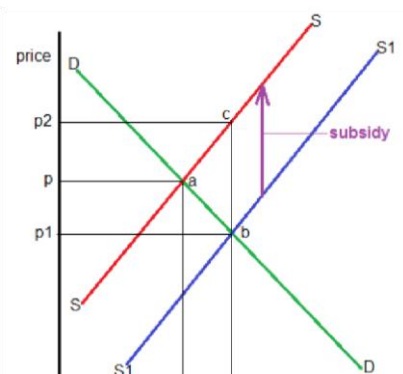
**- Subsidies on goods:**

- A subsidy is normally in the form of a financial grant to support the production of goods.
- It can be direct (such as cash grants and interest-free loans) or indirect (depreciation write-offs, rent rebates and meeting expenses on behalf of producers).
- They can be used for a variety of purposes, including production, income, employment and exports.
- Provision of merit goods by the private sector is one such purpose – in the case of education the government normally pay a subsidy to promote such education.
- The effect of a subsidy for private producers is a price increase from  $p_1$  to  $p_2$  and for consumers the price decreases from  $p$  to  $p_1$ . The quantity consumed increases from  $q$  to  $q_1$ .
- The subsidy amounts to  $p_2 - p_1$ .
- The producer makes a profit of  $(p_2 - p_1) \times q_1$ .

**- Redistribution of income and wealth:**

- The market system is neutral with regard to redistribution of income and wealth. Therefore the government is forced to use combinations of taxes, transfer payments and subsidies to create a redistribution effect.
- Two methods can be used:
  - Traditional methods:

- Usually a progressive system of taxation is used – the more people earn, the more tax they pay.
- The government uses this tax money to:
  - Subsidise goods and services to the poor;
  - Transferring income directly to the poor households (pensions, child support grants, disability grants);
  - Providing certain goods and services free of charge;
  - o Job-creation programmes;
- The government also uses tax money to finance the provision of merit goods.





Redress methods:

- These methods relate to the use of the law to enforce redistribution.
- It includes BEE, affirmative action, empowerment, land restitution, land redistribution and property subsidies (e.g. RDP houses).

**Government's production involvement**

- Governments are involved in producing goods and services themselves.
- **Public goods:**
  - Government's approach to incomplete markets is to intervene and supply the desired goods directly.
  - They raise taxes and provide the goods themselves. ○ Income taxes, indirect taxes and wealth taxes are used to pay for these goods and services.
  - Community goods are provided free of charge (defence, police and correctional services and street lighting).
  - Some collective goods are provided for a user fee, such as refuse removal, waste disposal and sewerage drainage.
  - The provision of some other collective goods is subsidised, for example clean water and electricity.
  - ○ The government can also provide merit goods directly, for example healthcare and education

**Macroeconomic stability:**

- If markets are free and the objectives of growth, employment, price and exchange rate stability and equity are not achieved, the government may perceive it as market failure and intervene. ○ The intervention focuses either on the demand-side or the supply-side of the economy:
- **Demand-side:**
  - The Keynesians believe that government have an important stabilisation function.
  - They believe that economic stability is best achieved by intervening with appropriate macroeconomic policies.
  - The most important of these policies are fiscal and monetary policy. ○ Supply-side:
  - Sometimes the objectives are not reached because of market rigidities.
  - The supply-side focuses on the capability of the economy and on policies that attempt to expand the stock of production factors and infrastructure, and to improve the flexibility of factor markets.

**COST-BENEFIT ANALYSIS****DEFINITION**

- For a private business to be efficient, it has to consider whether it will benefit from engaging in a specific activity, rather than an alternative activity.
- Also in the public sector the analysts have to decide whether society at large would be in a better position given the choice between two or more mutually exclusive alternatives.

- In both the private sector and the public sector project evaluation needs to be done in order to find answers:

**Private sector:**

- Comparison needs to be made between the expected private costs and benefits over the estimated time span of a new project.
- A feasibility study would be done, which also provides for the legal aspects relating to any externalities.

**Public sector:**

- Comparison needs to be made between the expected social costs and benefits over the estimated time span of the project.
- A cost-benefit analysis needs to be done.

A cost-benefit analysis is a systematic process for calculating and comparing the benefits and costs of a project, decision or government policy.

- In a CBA all the flows of benefits and the flows of costs of the project have to be expressed in money terms so that they can be compared.
- CBA has two purposes:
  - ✓ It assesses whether a new project will be a feasible investment. It will determine whether the project will benefit the country as a whole.
  - ✓ It evaluates the feasibility of different projects to determine which project will be the best investment.

**RATIONALE FOR COST-BENEFIT ANALYSIS**

- In a market resources are allocated through the interaction of demand and supply.
- Prices are the signals that bring the needs of consumers in line with the cost of supplying goods.
- But market signals may be non-existent or defective – especially when it comes to the provision of goods by the government, such as roads, bridges, airports, educational facilities, health care facilities etc.
- These projects will require large sums of money. Many people will be quick to state the advantages of going ahead with them while others will be more likely to state the disadvantages.
- Very often, such issues become a political debate with supporters and detractors being on different political sides. Debate on these issues is easier to facilitate if the facts are clearly available to everyone.
- Without firm market signals, decisions on the desirability of a project may rest mainly on subjective political views. Economically efficient resource allocation requires that objective criteria should be used as far as possible.
- The CBA seeks to bring greater objectivity to decision-making. It does this by identifying all the relevant costs and benefits of a particular project and quantifying them in money terms to provide a balance sheet upon which the final decision can be made.
- This is also important when considering the opportunity cost of a project – it usually comes at the expense of something else that the country really needs.
- The reasoning is that society should not produce output if the cost of production is greater than the value or benefit that the consumers get from

consuming the output. If the costs exceeds the benefits, society would be better off using some of the scarce resources to produce something else that gives them more benefits.

- **Cost-benefit analysis is therefore an essential tool to:**
  - Analyse and evaluate the social costs and benefits of two or more projects.
  - Make objective decisions.

## MECHANICS OF COST-BENEFIT ANALYSIS

In its simplest form a CBA involves **seven stages**:

- Identification and quantification of all private costs:
  - ✚ The cost of the production factors required to produce the output has to be calculated.
- Identification and quantification of all external costs:
  - ✚ The cost associated with any negative externalities (e.g. pollution) has to be estimated.
  - ✚ This is a difficult calculation, because it has to be done in monetary terms.
- Calculation of social cost:
  - ✚ Social cost = private costs + external costs.
- Identification and quantification of all private benefits:
  - ✚ This refers to the future earnings, profits and business expansion that would arise from a project.
  - ✚ This gives a measure of the value of the private benefit to society from the consumption of the goods.
- Identification and quantification of all external benefits:
  - ✚ Benefits associated with any positive externalities must be estimated.
  - ✚ For example if government provides merit goods, they will estimate the benefit to society of the output for which they are not willing or able to pay.
  - ✚ Very difficult to calculate sometimes – for example how do we put a value on less stress on commuters when traffic congestion is relieved by the building of a new road?
- Calculation of social benefit:
  - ✚ Social benefit = private benefit + external benefit. o Comparison and decision-making:
    - ✚ The money value of total cost is compared with the money value of total benefit.
    - ✚ Cost-benefit ratio = sum of economic benefits ÷ sum of economic costs.
    - ✚ A decision can be made as to whether to go ahead with production or not.
    - ✚ If the social benefit exceeds the social cost, the project can be implemented (ratio will be bigger than 1).
    - ✚ If the social benefits are equal to social cost, the project can be implemented (ratio will be equal to 1).

- ✚ If the social cost exceeds the social benefit, the project must be re-evaluated before a decision is made to go ahead (ratio will be less than 1).
- ✚ Cost-benefit ratio = sum of economic benefits ÷ sum of economic costs.
- The challenge to those undertaking a CBA is to put a financial value on all external costs and benefits.
- For example calculating the cost of noise pollution may involve calculating the extent to which house prices or rent in the area will be affected. It can also include the cost of additional soundproofing, such as replacing windows.
- Assessing the impact on the environment is also problematic – such as the disturbance of plant and animal life.
- Evaluating external benefits is also difficult – for example the extent to which local businesses might benefit will be difficult to estimate.

## APPLICATION

- Cost-benefit analysis is usually used for those projects where it is expected there will be a significant difference between private and social cost and benefits – it is expected that the market might fail.
- Building a highway through a residential area will have high social cost, while the building of a large dam in a very dry area will have high social benefits.
- Projects will usually go ahead if the social benefits exceed the social cost.
- The Gautrain project as well as the E-toll project underwent a CBA process.
- In order to determine the cost-benefit ratio the following equation is used:

**Cost-benefit ratio = (Present value of benefits) ÷ (present value of costs)**

- The numerator of the equation is the present value of all the expected economic benefits of the project – the prices or monetary value that the community places on them.
- The denominator of the equation is the present value of all costs of the project. These costs will include the construction costs as well as operation, maintenance and repair costs. Capital costs are incurred before the project begins. Operation, maintenance and repair costs are future costs that occur only when the project is operational.
- If the ratio is bigger than one ( $CBR > 1$ ), public expenditure on the project can be considered economically worthwhile. Present value of economic benefits will be greater than the present value of economic costs. Public expenditure will increase the well-being of the nation.
- If the ratio is smaller than one ( $CBR < 1$ ), public expenditure is not economically justifiable because the present value of economic benefits are less than the economic costs. Public expenditure will decrease the well-being of the nation.
- If the ratio is equal to one ( $CBR = 1$ ), public expenditure does not add any value to the nation's well-being.

## PRACTICAL USES

- ❖ A CBA is normally used in the public sector when they have to evaluate large-scale public investment projects, such as major highways, railway lines, airports, dams, harbours etc. in order to assess the social benefits to the population.
- ❖ In South Africa, cost-benefit analyses are extensively used by government, government agencies and NGO's.
- ❖ Each department or organisation will develop their own cost-benefit analysis document that serves as a guide for future projects. These documents provide regularly updated costs, procedures, policies and guidelines.

**The following projects have used a cost-benefit analysis:**

- The Working for water Programme – used CBA to select sites for water projects in South Africa.
- The Department of Environmental Affairs and Tourism – published a document on cost benefit analysis for their industry.
- The Energy Research and Development Centre – conducted a CBA in 2000 to determine the costs and benefits of using energy saving devices in low-cost housing. They found that consumers would have to spend more capital to save energy. Poor consumers (for whom the housing was intended) could not afford these costs. But the personal costs were offset by personal benefits in the form of lower consumption charges. Social benefits included less air pollution, less carbon production, better health and lower healthcare costs and job creation. Despite the benefits, homeowners could not afford the capital expenditure required and the project was delayed.
- ❖ If a business is planning to build a new factory it will consider the following:
  - The private cost of buying the land and constructing the factory.
  - The private benefit to the firm – increased output and higher profits.
  - If the private benefit exceeds the private cost, the firm will proceed.
- ❖ However, the business may need government approval to build the factory. In this case:
  - The government will consider the social costs of the project, namely: the scar on the natural landscape and the effect on the natural habitat and water supply.
  - The social benefits in the form of increased employment in the area, influx of new businesses that are related to the factory, tax revenue earned by government etc.
  - If the social benefits exceed the social costs, the firm will receive approval to proceed.

**CBA decisions have to deal with four issues:**

- a) What costs and benefits?
  - All possible costs and benefits need to be identified and calculated.
  - Once this is done, they should be ranked according to their remoteness from the main purpose of the project.
  - The more remote costs and benefits should be excluded.
  - For example:

- If cows in the area of a new airport start giving less milk after 10 years of operation, would the farmer be able to claim against the airport company?
- If the ramp at the carpark needs to be replaced after 20 years, should the replacement cost be included?
- If Eskom's electricity supply is interrupted, who will bear the cost?
- CBA requires careful definitions of the project, accurate estimation of project lives, and comprehensive consideration of all externalities.

**Valuation of the costs and benefits:**

- Market prices are normally used to value costs and benefits.
- Difficulties arise when distortions occur in the market, or the absence of a market price.
- For example:
  - Some projects are so large that they distort market prices. After the Gautrain project was approved, the prices of residential property along the route doubled, because people who commute to work prefer to live near the railway line. The CBA had to use the actual prices.
  - Prices of a monopoly may be relatively too high. Can market rates be negotiated? Whether it is possible or not, the Gautrain operating company had to use market prices for electricity and telecommunications costs.
  - Exchange rates may be manipulated by central banks in the case of a controlled floating exchange rate system. Market rates need to be determined for use in the CBA.
  - High unemployment levels cause low wages. Such wages do not reflect the social cost of labour. Normal wages have to be used for the purpose of the CBA.
- Calculations in the CBA should be done by using ideal prices. Market prices are ideal prices.
- Where market prices are not available, shadow prices can be used.
- It is very difficult to establish prices for intangible products (pollution and illness) and collective goods, such as parks, beaches, streets, bridges etc.

**The interest rate at which to discount:**

- Calculations are complicated by the fact that costs and benefits will occur at different points in time.
- In the case of the Gautrain project, a 20-year time period was used.
- Costs and benefits that will only happen in the future need to be converted (discounted) to a current value.
- To do such a conversion a discount rate (interest rate) has to be chosen.
- But which interest rate should be used? The repo rate or bank lending rate?
- Interest rates might be very low at the time – in this case a higher rate should be used.

- In South Africa our interest rates are not very low, the present repo rate may still be relatively high.
- Once a discount rate has been chosen, all future values have to be discounted to the present.
- For example: The Gautrain fare income was estimated at R300 million for the first operational year (2010). Discounted at 10 % the R300 million was just R186 million in 2005 when the project was approved.
- All costs and benefits have to be discounted in the same way.

**Income redistribution:**

- CBA analysis concentrates on the economic efficiency benefits of a project.
- If the benefits exceed the costs, acceptance of the project is recommended regardless who will benefit and who will bear the costs.
- Where decision makers feel that the redistribution of income is unacceptable, they may reject the project despite its benefits.
- This is the argument of Cosatu in the case of e-tolls – the poor cannot make use of the roads because they cannot afford to pay the e-tolls.
- The basic principle of implementation of the CBA is that losers must be compensated in cash or in kind and gainers must pay either in cash or by a higher price, or by means of a levy or tax.
- Otherwise, an undesirable distribution of income occurs. Only if losers are fully compensated by the gainers will there be no net loss of satisfaction.



## INFLATION

### **NB:USE THESE NOTES IN CONJUNCTION WITH CURRENT DATA**

- Inflation is an economic problem that every member of society has experienced. Not everybody agrees on the causes of inflation and the best way in which to fight inflation. The fight against inflation will only be successful if we can identify the real causes for it.

## DEFINITION

- Inflation can be defined as a sustained and significant increase in the general price level with the result that the buying power of money decreases.

For inflation to occur:

- There must be an increase in prices in all or most goods and services (increase of prices in general). An increase in the price of certain isolated products or single items without a rise in the overall average level of prices cannot be called inflation.
- The increasing prices should continue for some time.
- The increases should be considerable.
- The price increase must result in the decline in the buying power of money – the value of money decreases and fewer goods can be bought with the same amount.

This definition is preferred for the following reasons:

Neutrality:

- This definition is formulated in terms of the basic symptom – namely a price increase – and is neutral with regard to the causes.
- A neutral definition allows for all possible causes to be taken into account and provides the basis for an anti-inflation policy.

A process:

- This definition described inflation as a process – it is not a once-off increase in prices.
- It is a process whereby the prices of most goods and services increase over time.

Significant price increases:

- Inflation is concerned with a significant increase in prices.
- Small increases in prices could be as a result of improvements in the quality of the goods, and this could not be described as inflation.

## MEASURING INFLATION

- Changes in the general price level are measured by means of price indexes.

## INDEXES

- The average price level in the economy is measured in the form of an index number – a price index.
- Calculating a price index is very complicated – prices of a representative range of goods and services need to be recorded on a regular basis.
- In theory, every month, on the same day of the month, surveys are sent out to record thousands of prices of hundreds of items.



There are 3 indexes used to calculate the inflation rate:

#### Consumer Price Index (CPI)

- A measure of prices of goods that influence the cost of living and are used to calculate consumer inflation.
- This is done by first finding out what type of goods and services the typical consumers in the country buy, referred to as a “basket of goods and services” and how much of these goods and services they buy.
- The next step is to determine how the prices of these goods and services have changed over time in different areas of the country (urban and rural).
- These goods and services are weighted to indicate the importance of that product in the monthly budget of the average consumer. A formula is used to convert this information into an index.
- A base year is used to compare changes in prices from year to year – the inflation rate is calculated by comparing the average of the indexes in a particular year with the corresponding averages of other years.
- The CPI is always 100 in the base year.
- Statistics South Africa calculates the CPI –which is the official measure of inflation in South Africa.

#### Producer Price Index (CPI)

- Reflects the cost of production (rather than the cost of living).
- Calculates producer inflation and consists of a basket of local, exported and imported goods.
- Manufactured goods are priced when they leave the factory and imported goods are priced when they enter the country.
- All prices exclude VAT.
- PPI is estimated and published monthly by Stats SA and is used to predict consumer inflation.

The implicit GDP deflator – an all-inclusive inflation rate

- The CPI and PPI are measures of 2 different baskets of goods.
- However, we are also interested in prices of all goods and services included in the GDP.
- Complicated techniques are used to compile a third index – the **implicit GDP deflator** that actually measures GDP at constant prices, but can also be used as an all-inclusive measure of inflation

#### WEIGHTING

- To overcome the problem of differences in the importance of an item in an index, a weighted index number makes the figures directly comparable.
- The weights reflect the relative importance of an item – if food is given a weight of 30 % and housing a weight of 15 % it means that a change in the price of food is twice as important as a change in the price of housing.
- An index number can be calculated by the price relative method:

Item	(1) Base Price in rand (year 1)	(2) Price in rand (year 2)	(3) % increase (year 1 to year 2)	(4) Weight	(5) Product (3) x (4)
Food	25	30	20	30	600
Housing	20	22	10	15	150
Transport	5	10	100	10	1 000
Services	10	12	20	5	100
Total				60	1 850

- Step 1:
  - Calculate the percentage increase from year 1 to year 2. o This is done by calculating the difference in price from year 1 to year 2. o The difference in price is then divided by price in year 1 and then the answer is multiplied by 100.
  - This is the value in column 3.
- Step 2:
  - The percentage increase (column 3) is then multiplied by the weight (column 4) to get the product (column 5).
- Step 3:
  - All the products in column 5 is added together (1 850) and then divided by the sum of the weights in column 4 (60). o  $1\ 850 \div 60 = 30.83$  o This means that, on average, prices have increased in year 2 by 30.83 %.
  - If the index was 100 in year 1 (base year), then the index for year 2 would be 130.83.

## INFLATION RATE

- The inflation rate can be calculated as soon as the consumer price index has been calculated.
- Inflation is always expressed as an annual (yearly) rate, unless otherwise stipulated.
- The most common practise is to compare the index for a particular month with the index of the corresponding month in the previous year on a year on year (y/y) basis.
- The result is then expressed as a percentage increase.
- The index for a particular month can be compared to the index of the previous month within the same year, for example, on a month to month (m/m) basis.
- It is often also compared on a quarter to quarter (q/q) basis, where this quarter is compared to the previous quarter.

### Example:

What is the inflation rate if there is an increase in the CPI from 160 in 2019 to 170 in 2020?

$$\text{Rate of Inflation} = \frac{\text{CPI}(t) - \text{CPI}(o)}{\text{CPI}(o)} \times 100$$

$$= \frac{170 - 160}{160} \times 100$$

160

= 6.25 %

Key to formula:

(t) = current period (most recent year, later year,)

(o) = base year (earlier year)

## TYPES AND CHARACTERISTICS OF INFLATION

Specific indexes are used to measure specific types of inflation.

### CONSUMER INFLATION

Three different types of consumer inflation rates are used in South Africa:

#### Headline inflation:

- Consumers' inflation is measured by the Consumer Price Index (CPI). In South Africa it is calculated for urban areas only.
- It represents the cost of the "representative basket" of goods and services typical of an average South African household.
- In compiling the CPI, Statistics South Africa does 5 things:
  - Identify and selects the goods and services to be included in the basket. For this, an indepth survey of household income and expenditure is done. At national level, the total CPI basket includes 416 items. A slightly lower number is included in the baskets of each province – this implies that the actual prices that are collected are around 100 000 every month.
  - Assign a weight to each product in the basket to indicate its relative importance in the basket. The weights of the different goods are not changed very often.
  - Decide on a base year (currently 2008). The base year will be the same for all SNA accounts.
  - Decide on a formula to calculate the CPI.
    - o Decide on processes to use for collecting prices. In South Africa, prices are obtained by means of surveys. Some prices are collected directly by SSA officials.
- The CPI is published monthly by SSA and quarterly by SARB and gives details for 12 months.
- This is the most comprehensive consumer inflation rate in South Africa.
- It reflects the inflation experienced by the average household in urban areas. It is the rate that unions use in their wage negotiations, and is also known as the headline inflation rate.
- The SARB uses the CPI as indicator of inflation in its pursuit of inflation targets – they have to keep inflation between 3 and 6 %. The Monetary Policy Committee (MPC)

meets every 2 months to consider inflationary conditions and to decide on suitable Monetary Policy interventions.

### **Core inflation:**

- Core inflation excludes items from the CPI basket that have highly volatile prices and items with prices that are affected by government intervention and policy.
- These items include food, petrol and electricity.
- It is compiled from the detail provided by the CPI.
- Headline inflation is subject to seasonal variations in food prices – this is absent from core inflation.
- Core inflation is more stable than headline inflation.
- A comparison between headline and core inflation reveals where the inflation pressure comes from.
- If it is from core inflation, monetary policy should be applied.

### **Administered price inflation:**

- Administered prices are the prices of goods and services that are set by government or controlled by government appointed authorities.
- Examples include: assessment rates and property taxes, sanitation, refuse removal, water, electricity, fuel, paraffin, telephone and cell phone call rates, telephone line rental, postage, television and radio licences, bus fares, train fares, licences, vehicle registrations, school fees etc.
- It is important that administered price changes remain within the inflation target range.
- The inflation target is prescribed by the government (Minister of Finance) – government should therefore ensure that the prices that they are responsible for remain within the range.
- However, recently it moved consistently above the upper limit of headline inflation and exercised upward pressure on the CPI.

### **PRODUCER INFLATION**

- Producer inflation is measured by the PPI.
- The PPI measures prices at the level of the first commercial transaction.
- It measures inflation that is due to an increase in input cost.
- The PPI indicates changes in producer prices of locally produced goods, imports and exports.
- The prices of imports are measured when goods first enter the country, and not when they are sold.
- The prices of manufactured goods are measured when they leave the factory and not when they are sold to consumers.
- The basket includes capital goods and intermediary goods.

## IMPLICIT GDP DEFLATOR (all-inclusive inflation)

- This index includes changes in prices of all final goods and services produced in a particular year, not only a selected basket of goods.
- To calculate the implicit GDP deflator, we use the GDP figures at constant and current prices.
- Although the major purpose of the conversion of GDP at current prices to GDP at constant prices is to measure economic growth, it also yields a measure of inflation.
- This is because the difference between nominal and real GDP indicates the changes to prices –it is therefore an inflation rate for the economy as a whole.
- The implicit deflator is simply the ratio of the GDP at current prices to the GDP at constant prices for a particular year.
- The GDP deflator is also an index figure – constant prices are not the prices of each previous year – only in the first year after the base year will the GDP deflator give us the inflation rate directly.
- To calculate the inflation rate, the same procedure is used as for the CPI inflation rate:

$$\frac{\text{GDP deflator (year 1)} - \text{GDP deflator (base year)}}{\text{GDP deflator (base year)}} \times 100$$

- The implicit deflator gives an inflation rate for the economy as a whole – it is a much broader based index than the CPI and PPI, which only includes the representative basket of goods.
- However, the drawback is that it includes exports but excludes imports.
- When export and import prices are increasing at the same rate it is not a problem, but when export and import prices are increasing at different rates, the inflation rates calculated on the basis of the GDP deflator may give wrong signals.
- Because of this problem, GDE or GNI deflators are often used. They are calculated in a similar way but exclude export prices and include import prices.

## HYPER INFLATION

- This refers to extremely rapid and substantial changes in the overall level of prices (50 % per month or more).
- It means that inflation is out of control and its level is not predictable – it is also called runaway inflation.
- When price levels increase so rapidly that people lose confidence in the value of money, it can be difficult for the economy to operate.
- Hyperinflation is usually accompanied by an increase in money supply that will result in the currency of the country becoming practically worthless.
- It may happen when governments start to print money to cope with paying their debts, and when production outputs are low and therefore unable to supply the demand for goods and services, or when a country is at war.
- People resort to goods (such as cigarettes) as a medium of exchange to make payment. Barter makes a come-back with people exchanging goods for goods.

- During hyperinflation the national currency is worth almost nothing.
- Zimbabwe is an example of a country that experienced hyperinflation. Estimates in December 2008 put their inflation rate at 650 million googol per cent, which is  $6.5 \times 10^{108}$  % or 65 followed by 107 zeros!!

## STAGFLATION

- A condition of stagnation of economic growth (low growth and high unemployment) and high rates of inflation.
- This condition prevailed in many developed countries in the 1970's due to a dramatic increase in oil prices.
- It is a difficult situation for any government because: The measures it uses to lower inflation will lead to higher unemployment; o The measures it uses to increase employment will lead to higher inflation;

## OTHER TYPES OF INFLATION

### Deflation:

- This refers to the situation where the general price level decreases over a period of time. o This is the opposite of inflation. o An inflation rate of 0 % or less (deflation) is a problem worse than inflation because it discourages investment in new and existing business and causes real wages to drop as companies reduce employment.

### Disinflation:

- This happens when there is a reduction in the rate of inflation, in other words the general price level is increasing at a lower (decreasing) rate.

## COMPARISON OF INFLATION RATES

- For policy purposes and forecasting all the indexes (CPI, PPI and GDP deflator) as well as other implicit deflators are considered.
- However, for consumers, trade unions and politicians the CPI is by far the most important.
- This index relates to their cost of living and to the interest rate policy of the SARB.
- It is important to remember that the inflation rate measures the trend in the average price level:
  - In specific areas or provinces a different trend from the average price level can occur – for this reason separate inflation rates for each province is published.
  - o Specific groups of individuals, with an expenditure pattern that deviates from the average, for example the rich or poor, young people or the elderly, can each experience a different inflation rate.
  - o Each individual household experiences their own average price level and its own inflation rate. This depends on their particular spending patterns. The contents of their basket could differ from the basket used by SSA in the CPI.

## CAUSES AND CONSEQUENCES OF INFLATION

### DEMAND-PULL INFLATION

- This is the type of inflation where too much money chases too few goods – this happens when demand exceeds supply.
- We also say that demand-pull inflation occurs when aggregate spending in the economy increases faster than production.
- The monetarist explanation is relevant.

#### The monetarist explanation

- According to the monetarists, sustained high growth in the money supply cause high inflation, while low rates of growth of the money supply cause low inflation.
- They argue that high rates of inflation cannot be sustained without persistently high increases in the money supply.
- The monetarists base their view on the quantity theory of money, which is based on the equation of exchange:  

$$MV = PT$$
  - M = total amount of money in circulation (notes, coins and deposit money)
  - V = velocity of circulation of money (speed at which it circulates)
  - MV = the amount of money used in a period of time
  - P = general price level
  - T = total number of transactions taking place in a period of time
  - PT = money value of all transactions in a period of time
- The real value of goods and services produced during a period of time, multiplied by their average prices will be equal to the quantity of money multiplied by the circulation rate of money.
- To calculate the velocity of circulation of money, the following formula is used:

$$\frac{PY}{M1}$$

P = general price level

Y = output

M1 = money supply

- This equation was converted into a theory of inflation by making three assumptions:
  - The velocity of circulation of money is stable – in practice V tends to be relatively stable over time;
  - The quantity of money is exogenously determined by monetary authorities and is not influenced by changes in output (Y) or prices (P);
  - Real output (Y) is determined by the quantity and quality of the various factors of production and is not influenced by changes in the quantity of money;
- Together, these three assumptions imply that the price level is determined by the quantity of money.
- The magnitude of the increase in prices is therefore determined by the magnitude of the increase in the quantity of money.

## **Causes of demand-pull inflation**

Demand-pull inflation can be caused by any of the various components of aggregate demand.

### **a) Increase in consumer spending (C)**

- The disposable income of household can increase at a faster rate than aggregate supply for three reasons:

Less savings:

- If consumers change their savings habits and start spending their current and accumulated savings, growth in aggregate demand can be faster than growth aggregate supply.
- Without savings there will be no liquidity for banks to finance essential capital investments.

Reduction in taxes:

- If personal income tax decreases, households will have higher disposable income, which means more money to spend on consumer goods and services.

Access to credit:

- There is greater availability of consumer credit or the availability of cheaper credit as a result of lower interest rates.
- As new credit is extended, the credit multiplier kicks in and more credit is created.
- A decrease in the discount rate by the Reserve Bank is usually copied by the various financial institutions.
- It is therefore cheaper for individuals to obtain credit, and the demand will be stimulated.
- Availability of credit in the form of credit cards and personal overdrafts and loans will make it possible for people to buy things they would not be able to afford from their monthly income.
- If there is not an increase in production in the economy, prices will increase due to scarcity.

### **Investment spending (I)**

- Lower interest rates may result in an improvement in the sentiment and profit expectations of businesses.
- Businesses might invest more (expand their operations) and this may lead to an increase in the demand for the goods and services that are part of the investment (e.g. new building requires more cement, bricks and labour).
- If aggregate demand increases faster than aggregate supply, price increases will follow.

Government spending (G)



An increase in government spending without a corresponding rise in aggregate supply leads to an increase in prices.

- If increased government spending is financed by borrowing from the banking sector, large sums of money are placed into circulation and the money multiplier comes into operation – aggravating the demands on the economy's capacity.

Government can use three channels for increased spending:

Infrastructure:

- A government might launch capital projects such as roads, water and electricity.
- A great deal of money is put into circulation without an increase in the production of consumer goods and services.
- Prices are bound to increase.

Consumption spending:

- Most governments will increase expenditure on education, health, protection and safety.

Social spending:

- Governments sometimes feel they have to do something substantive about unemployment and poverty.
- They borrow money and spend it on public works programmes or raise the level of social grants at a rate that is higher than the inflation rate.
- Money paid to recipients each month is used to buy goods and services – this leads to an increased demand without an increase in aggregate supply.



Export earnings

- An increase in exports without an increase in local production will cause inflation because goods and services leave the country and reduce the volume of goods available locally. Local prices will increase to dampen local demand.
- Increases in earnings from exports can come from various sources:

Foreign growth:

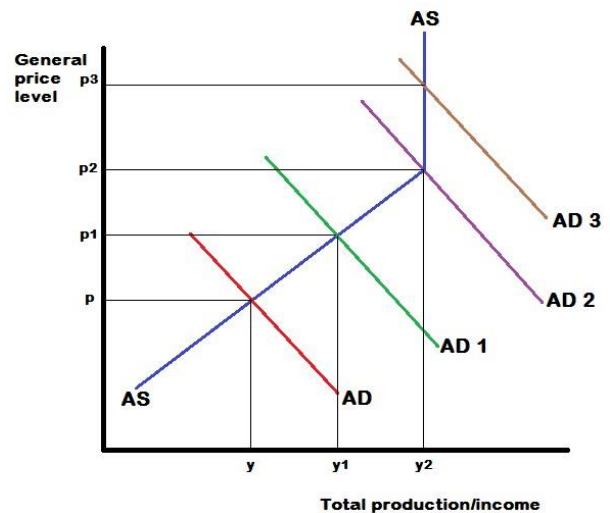
- Growth of the economies of our trading partners may create a demand for a variety of locally produced goods.
- The sales of exports bring money into the country.
- Demand increases without a corresponding increase in supply, resulting in price increases.

Commodities demand:

- The world's demand for commodities expands and contracts like business cycles do.
- During an expansionary phase foreign demand increases and this leads to greater volumes of exports.
- The income earned from these exports adds to aggregate demand without adding to aggregate supply, and prices will increase.
- Commodities are raw materials such as minerals, metals and agricultural produce.

### The inflationary process

- The AS curve has a rising part and a vertical part.
- An increase in aggregate demand results in an increase in real output until  $y_2$ , which is the full employment level.
- Beyond this point output can only increase if more production capacity is created and this takes time.
- The demand-pull inflation is shown as a shift to the right of the AD curve. An increase in aggregate demand leads to an increase in the price level ( $p$ ) as well as an increase in production and income ( $y$ ).
- Demand-pull inflation initially has a positive impact on production, income and employment, provided that there is still some spare capacity.
- When the economy is in full employment, further increases in demand simply lead to price increases and inflation.
- This happens when the AD curve shifts from AD 2 to AD 3 along the vertical part of the AS curve and prices increase from  $p_2$  to  $p_3$ .



### COST-PUSH INFLATION



- Cost-push inflation is a general increase in prices caused by increases in factor costs.
- In order to stay in business, producers are compelled to pass these higher production costs on to consumers in the form of higher prices.
- This type of inflation is caused by the supply side of the economy – prices increase as a direct result of a rise in production cost or input costs.

### Causes of cost-push inflation

Cost-push inflation can be caused by any of the various components of production costs:

#### Wages

- This is the most important single cost item in any economy.
- Wages and salaries constitute almost 50 % of gross value added at basic prices.
- Increases in wages and salaries are a very important cause of cost-push inflation.

#### Key inputs

Costs of imported raw materials and capital equipment increase due to inflation in supplier countries.

- When the prices of these key inputs that are imported increase (oil, energy, capital goods), the domestic costs of production are pushed upwards.
- In South Africa these goods are essential for the smooth performance and growth of the domestic economy, especially in manufacturing.

#### Depreciation of the exchange rate

- A weakening of the rand against the currencies of our major trade partners will mean that we must pay more for our imports.
- The obvious thing is to import less when the rand depreciates, but this is not always possible – if a machine needs a component for example, it has to be replaced.
- The price of such things will increase, and also increase the prices of goods and services in our country.

#### Profit margins

- Interest, rent and profit is also a major cost for producers.
- When businesses push up their profit margins they increase the cost of production and eventually the prices that consumers have to pay, as manufacturers recover the higher prices they had to pay by increasing their prices also.
- A sudden rise in interest rates will increase interest payments on loans, leading to higher costs for businesses. Producers might recover these higher costs through increasing the prices of their prices.

#### Productivity

- If the various factors of production become less productive while still receiving the same remuneration, the average cost per unit of output increases.
- Wage increases that are not accompanied by similar productivity increases also have such an effect.
- Strikes and stay-aways reduce output and cause a drop in supply.

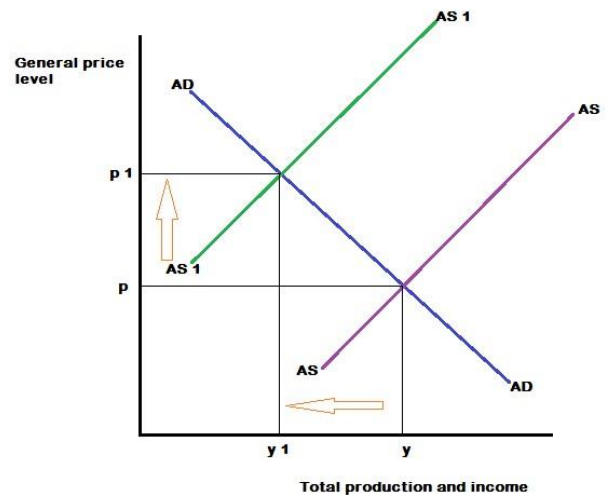
#### Natural disasters

- Disasters such as drought, floods and even global warming impact on the costs of producers.
- Food prices are one of the most volatile price items in inflation indexes as a result of the effect of changes in the weather.

Cost-push inflation has a tendency to perpetuate itself as the factors feed on one another and cause an inflation spiral. The inflation spiral starts, for example, with higher oil prices that push up the prices of a variety of goods and services. This is followed by trade union action that results in higher wages to compensate for higher prices. These higher wages causes the producers to increase their prices to recover higher input costs. Trade unions take further action to demand higher wages and the process is repeated, moving the circle up and up all the time.

### The process of cost-push inflation

- Cost-push is reflected in an upward shift of the AS curve.
- An increase in the cost of production results in a decrease in supply.
- When the supply decreases it results in higher prices and lower levels of production and income.
- Cost-push inflation has a negative impact on production, income and employment.
- Higher prices make goods and services less affordable which means less are sold and produced.
- This causes lower employment levels.
- Hence, there is a shift in the AS curve to AS 1.



### THE CONSEQUENCES OF INFLATION

The higher the inflation rate, the more serious its consequences will be. Remember also that when inflation decreases, it does not mean that prices are also decreasing – it simply means that prices are increasing at a slower rate.

#### Creditors and Debtors

- Borrowers (debtors) benefit from price increases, but lenders (creditors) suffer because of it.
- This is because borrowers borrow money with a relatively high purchasing power, and then repay their loans with money with lower purchasing power, unless interest rates are sufficient to prevent this.
- This applies to all assets so people with money in the bank (savings) will lose as the real value of their money decreases, but people who borrow money to buy expensive articles will gain as they use money with a lower real value to repay their original debts.

#### Salary and wage earners

- Price increases affect people whose incomes are relatively fixed, for example people whose incomes do not increase at the same rate as prices do.
- This group includes retired people, pensioners and the poor. As prices increase, their almost fixed income purchases less and less.
- On the other hand, there are individuals and entrepreneurs whose incomes often increase at a rate that is higher than the inflation rate and they do not suffer, but gain from inflation.

#### Investors and savers

Different types of investments are affected differently by inflation:

#### Assets with fixed nominal values:

- A large portion of the wealth of individuals is held in the form of fixed value, fixed interest-yielding claims such as fixed deposits, company debentures and government bonds.

- These assets have a fixed nominal value and give a fixed return if they are held until maturity.
- Because their nominal value remain constant, the purchasing power of the nominal value decrease when there is inflation – their real value decrease.

Assets with flexible market values:

- The holders of shares and fixed property usually gain by price increases because the nominal values of their assets tend to increase at least proportionately to the rate of inflation – market values are flexible.
- Prices of these assets often increase more rapidly than increases in the general price levels.
- In this case, inflation creates wealth to the advantage of the people holding these assets.

Taxpayers

- South Africa uses a progressive tax system.
- This means that marginal and average tax rates increase as income levels increase.
- The higher an individual's income is, the greater the percentage of income that he has to pay in tax.
- With inflation, taxpayers' nominal incomes (wages and salaries) rise even when their real incomes remain unchanged.
- Taxes are levied on nominal income and not on real income.
- Therefore, if the income tax schedule remains unchanged, inflation increases the average rate of personal income tax.
- Individuals will have to pay higher taxes even if they are actually not better off than before.
- This phenomenon is known as "bracket creep" or "fiscal drag" and leads to redistribution of income from taxpayers to the government.
- Fiscal drag refers to a situation where salary increases (to keep up with inflation) move people into higher tax brackets. These people don't get the full benefit of the salary increase because a larger percentage of their earnings is now going to government in the form of taxes.
- Bracket creep results from a combination of inflation and progressive income tax. It has the same effect as an increase in the tax rate.

Industrial peace

- Wage bargaining is often accompanied by strikes and mass action.
- These actions sometimes spill over into violence, which affects society at large.
- In extreme situations, in the presence of exceptionally high inflation together with a government that is determined not to yield to wage increase demands, widespread civil unrest has followed.

EXPECTANCY AND INFLATION

- The demand-pull and cost-push factors outlined earlier in this section can all act as triggers to set an inflationary process in motion.
- However, once the process is underway, the distinction between the initiating causes becomes blurred and other factors also come into play.

- To understand the process of inflation we will investigate the mechanisms that transmit price increases through the economy and over time, and which in so doing generate a continuous and considerable rise in general prices.
- This is where inflationary expectations come in.
- Inflationary expectations are based on past experiences of inflation and not on clinical estimates of the future rate of inflation.

The role of inflationary expectations work as follows:

- During periods of inflation, consumers expect prices to rise. They buy goods and services before their prices increase and thereby add to aggregate demand. People spend their money because they expect prices to rise. Similarly businesses try to persuade their customers to rather buy now, before prices increase. If they do, they push up aggregate demand and create demand-pull inflation.
- Labour unions wish to protect their members' income against the erosion of purchasing power caused by inflation. They bargain for wage increases that will neutralise the effect of future inflation. However, by doing this, labour increases production costs, which are passed on to consumers in the form of higher prices.

Costs shifts the aggregate supply curve to the left and cause cost-push inflation.

- The expectations that wages (or any other input costs) will increase will encourage some businesses to increase prices in advance. They use the expectations window to increase their profit margins, and increase the prices of their goods and so cause more cost-push inflation.
- Thus the higher the expected rate of inflation, the higher the level of wage and price increases will be, and the higher the resulting actual rate of inflation will be.
- Inflation expectations are thus self-fulfilling.

## THE INFLATION PROBLEM IN SOUTH AFRICA

- From 1981 until 2010 the average inflation rate in South Africa was 10 %, reaching an historical of 20.8 % in January 1986 and a record low of 0.10 % in January 2004.  
The inflation rate was relatively low until the early 1970's, averaging 2.5 % during the 1960's and comparing well with the inflation rates of our main trading partners.
- It picked up and reached double digits in 1973.
- During the 1970's the average inflation rate was 10.3 % and entered a relative stable period around a level of 11 % in the late 1970's.
- During the 1980's the inflation rate ranged between 11.5 % and 18.6 % but decreased considerably in the early part of the 1990's.
- In 1993 it dropped to beneath 10 % and decreased further to 5.2 % in 1999.
- On average, consumer prices rose by 9.3 % during the 1990's.
- The SARB contributed to the slow-down in inflation during the first half of the 1990's by applying conservative monetary policy since the late 1980's.
- Currently the trend is a moderate increase.

### Short term expectations

- The Monetary Policy Committee mentions the problems that are observed when it takes decisions on its inflation policy at their meetings.
- **Demand:**
  - When the demand for goods and services cannot be met by an increase in output, it causes an increase in prices.

### Production capacity:

- Increases in the GDP can be used to measure the level of demand.
- If local manufacturers have little capacity to increase output and formal employment increases, inflationary pressures develop.

### Borrowing:

- Household debt is a continuous concern.
- House prices have increased at a negative real rate for most of the time since mid-2007.
- The ratio of household debt as a percentage of disposable income increased from 60 % in mid-2004 to 78 % in mid-2012.
- This indicates an increase in demand and a pressure on prices.
- However, since 2009 it was the major force behind growth in the GDP.
- o Sales of durable goods:
  - Domestic new car sales increased by 16 % in 2011 but prices remained in the inflation target range.

### Money supply and credit:

- An increase in the demand for credit is a characteristic of the upturn phase of the business cycle.
- When credit is freely granted, it increases the demand, and this pushes up prices.
- M3 money supply increased in some months during 2011 by 8.1 %. ■ Bank loans to the private sector grew by 6.3 %.

### Cost:

#### World inflation:

- If the world inflation rate is higher than the inflation rate in South Africa it puts pressure on domestic prices. If it is lower, it reduces pressure on domestic prices.
- Inflation in our major trading partners was less than 2 % in 2012, compared with our rate of 5.5 % in early 2012.
- This reduces pressure on our inflation expectations.

#### Labour costs:

- Nominal wage increases per quarter over the last 5 years was consistently above productivity increases in the formal non-agricultural sector.
- Generally these increases are not accompanied by an increase in labour productivity, so workers are paid more but they produce the same amount of output as before.
- This put pressure on business' viability and the inflation rate.

#### Key inputs:

- A key imported input is crude oil.
- Government announces fuel prices once a month.

- International prices and the exchange rate of the rand against the dollar are the two most important forces determining domestic fuel prices.
- In 2012 petrol, diesel and paraffin prices reached their highest ever level in South Africa.
- Crude oil is a crucial cost factor.

#### Administered prices:

- Administered prices are continuously above the inflation target rates.
- Individuals, poor and wealthy, and businesses suffer because of it.
- It appears that some of these prices will remain extremely high over the short term.

#### Market prices:

- The prices of goods such as food, clothing and medical services are continuously under the scrutiny of the MPC.
- Some price increases are of a seasonal nature, for example food.
- The costs of medical services are partly controlled by the Department of Health and the Council for Medical Schemes.
- Recent experience showed that medical inflation cannot be contained.
- The fact is that the controllers become responsible for the efficiency of schemes.
- Administrative and broker costs are surging and benefits are being reduced.
- Government intervention did not contain medical inflation – it merely caused an erosion of the service that is provided.

#### Exchange rates:

- The level of the exchange rate is always highly uncertain.
- Its volatility, and not so much the level, is the problem.
- The inflationary effect is felt in a depreciation of the rand.
- When the rand depreciates against the currencies of our major trading partners, it means that the prices of all imported goods increase in terms of the rand. This adds to inflation, especially in the case of imported crude oil and petrol.
- But because the rate is so volatile, it increases for a short period and decreases again for a month or two.
- These changes cancel any effect in the short term.

#### Long term expectations

#### Infrastructure:

- Government established the Presidential Infrastructure Coordinating Commission (PICC) which identified 645 infrastructure projects across the country to be completed over the next 20 years.
- In the meantime inflationary pressures are being caused by inadequate capacity, for example in electricity and transport.
- The cost of financing of these projects always escalates and these escalations find their way into inflation.

#### Energy:

##### Liquid fuels:

- Petrol and diesel fuels, which are produced from imported crude oil, are a direct cost item for households as well as businesses.



- Domestic petrol and diesel producers such as Sasol and Petro SA apply import parity pricing (IPP) – the pricing of locally produced goods at levels found in other producer countries plus notional costs such as transport, insurance and import duties.
- Regular upward prices cause more inflation.
- Added to the real cost are yearly increases in the fuel levies.
- Government prefers to raise these levies rather than increasing VAT. ▪ But like all other taxes, it does have inflationary consequences.

#### Fuel stocks:

- Local refineries operate at full capacity.
- Petro SA plans to build a refinery named Mthombo at Coega near Port Elizabeth.
- Local stocks are insufficient to cushion fluctuations in consumptions, so fuel and oil has to be imported to meet increases in consumption.
- Unavailability of fuels, even for short periods, adds to costs and eventually results in inflation.

#### Electricity:

- Eskom seems to have inadequate capacity to deliver uninterrupted supplies to a growing economy.
- Interruptions and costs to install stand-by electricity equipment, and the building of the new power station at Medupi, have had serious cost effects.
- In June 2012 Eskom announced its intention to ask for electricity price increases of 14.5 % per year for five years.
- The direct effect of this increase on the CPI will not be huge, but the real effect on the continued existence of businesses, and price increases passed on in second round inflation will be substantial.

#### Labour:

- The private and public sectors are experiencing severe shortages of skilled and highly skilled workers.
- Red tape and delays in getting work permits makes it very difficult to recruit workers abroad.
- Even foreign businesses who invest in South Africa are in most instances unable to bring along qualified workers.
- Escalations in the cost of such labour are bound to lead to cost and price increases.
- In addition inflation-wage spirals because of rising fuel, energy, transport and food prices all add to inflationary pressures.

#### Exchange rate depreciation:

- South Africa attracted large “hot money” capital inflows during the 2000’s and up to 2012.
- The lurking risk is a sudden turnabout of the inherently volatile portfolio inflows.
- Since much of these flows went to South African bonds, a turnabout would have raised the borrowing cost for both the corporate and the public sectors.
- The rand, which has held strong and contained the cost of imported inflation could again weaken and add to inflationary pressure.

#### Social spending:

- The government is always under pressure to increase social spending, particularly on cash grants.
- In 2012, almost 30 % of the population benefited from such expenditures. o Taxes as a percentage of GDP have already increased from 25 % to 27 %.
- Further increases in taxes will fuel inflation.

## MEASURES TO FIGHT INFLATION

### DEMAND-PULL INFLATION

- To combat demand-pull inflation, the monetary authorities have to keep the aggregate demand for goods and services in check.
- They do this by applying restrictive monetary and fiscal policy.

#### Fiscal policy

- Fiscal measures include measures relating to government finances such as their revenue and expenses. Decisions are taken by the Minister of Finance to curb inflation.

Restrictive fiscal policy entails:

Government spending:

- Government should cut down on spending – for example by lowering the rates of salary increases and cancelling infrastructure projects such as building dams or public buildings.
- Governments can borrow less to finance their expenses, thereby not contribute to an increase of money in circulation.

Government, through the central bank, can buy or sell fixed-income securities (bonds) to increase or decrease the available cash that can be used for consumption.

Taxes:

- Increasing direct taxes such as income tax and property tax in order to reduce disposable income and curb excessive demand and spending.
- Increasing indirect taxes such as VAT and tax on fuel and liquor will increase the cost of living and will reduce demand because consumers will buy fewer goods and services.
- Implementing a surcharge on imported goods will curb spending on imported goods.

Measures to increase productivity:

- Government can introduce measures, such as tax rebates, to increase productivity.

#### Monetary policy

- A central bank must watch the growth and size of the money supply closely. The bank can apply monetary measures to adjust the quantity of money needed in the economy.

- Restrictive monetary policy entails raising the interest rates and limiting the increase in the money supply.

Decreasing the money supply:

- Increasing the lending rate (repo rate) to commercial banks. These banks would have to charge higher interest rates on loans and overdrafts, making it more expensive for people to borrow money to spend on goods. The demand for goods will drop, causing prices to stabilise.
- Restrict the granting of credit by banks in order to restrain spending.
- Implement a cash reserve system that requires financial institutions to hold certain minimum cash reserves in the central bank.

Moral suasion.

- Selling government bonds – when consumers buy bonds money will flow to the financial sector and out of circulation.

Setting inflation targets:

- The central bank sets inflation targets and applies measures in an attempt to meet the set targets.
- It is believed that by setting a target, inflation expectations of consumers, producers, employers and the workers will be reduced and that they will behave in such a way to achieve the set target.
- This raises the cost of credit and also reduces the availability of credit to the various sectors in the economy.

Fiscal and monetary policies tend to reduce aggregate demand. It will cause a shift of the AD curve to the left. This will result in lower prices, but may have some unwelcome side-effects as production, income and employment tend to fall as well.

## COST-PUSH INFLATION

- Cost push inflation is caused by forces that push up the cost of production.
- The application of contradictory monetary and fiscal policies further decrease production, income and employment – a recession may even be induced.
- To avoid cost-push inflation, two indirect policy approaches are used:

Productivity

- Increases in factor productivity are the best option.
- Wage increases need to be accompanied by productivity increases.
- Better-skilled workers also form a very important part of the structural measures to improve the supply side of the economy.
- Improvements in technology can play an important role as well.

Competition

- The best method for keeping a check on profit margins is to ensure competition – domestically and internationally.
- Because we have a relatively small economy, the number of suppliers of goods and services are also small.
- This can lead to the formation of monopolies and higher prices.

- Encouraging competition is one strategy applied in the fight against inflation because its greatest advantage is competitive prices.

In principle, the most appropriate way to deal with cost-push inflation is to try and create room for AS to shift to the right (increase) when conditions demand it. This is achieved by applying well-designed supply-side policies early enough. Economists see measures to activate the supply side of the economy as positive measures, also called structural measures. Structural measures are often necessary to strengthen market forces in order to improve the flexibility of the economic system and to ensure greater economic discipline.

## INFLATION TARGETING

- Inflation targeting is the most effective policy tool that can be used to break inflationary expectations, which cause the continuation of inflation.
- Inflation targeting works as follows:
  - Setting an inflation target by the Monetary Policy Committee (of which the Minister of Finance and the Governor of the SARB are members).
    - o Making a public announcement about the target, as well as the time frame for achieving it. In South Africa this target is set between 3 % and 6 %.
  - A commitment by government and the SARB to achieve this target.
    - o Choosing a policy instrument to achieve the target. In South Africa the chosen instrument is the repo rate, which is the rate of interest that commercial banks pay to borrow money from the Reserve Bank.
  - Decisions about changes in the chosen instrument being based on an information-inclusive strategy. The decision to change the repo rate is taken by the MPC, which meets every three months. During the meeting a wide range of variables are considered before a decision is made.
  - Transparency – keeping the public informed about the decisions and plans of the monetary authorities. Once a decision has been made, the decision and the factors influencing their decision are conveyed to the public.
  - Accountability by the SARB to achieve targets. The SARB is accountable to parliament for achieving their goals.
- South Africa formally introduced inflation targeting in February 2000.
- Inflation targeting has three main advantages:
  - It is simple and easy to understand – the target is expressed in numbers which makes it very clear and transparent;
  - It leaves no doubt that the intention is to keep inflation at a low rate. Monetary policy is exclusively aimed at achieving price stability. It reduces uncertainty and promotes sound planning in the public and private sectors;
  - It provides an explicit yardstick that serves to discipline monetary policy and improves the accountability of the central bank. The bank has to act on the signals that the economy indicates;

- South Africa's target was to keep an inflation rate of between 3 % and 6 % increase in the CPI in 2012.
- South Africa opted for a target range rather than a point target (specific inflation target, for example 4.5 %).
- Target range rates are based on the CPI and are reconsidered every year.



## Tourism

All around the world tourism developed spontaneously. People got involved in tourism when they had the money, the opportunity and the time. Nobody regulated or controlled it for many decades. However, by the mid-1970's, businesses started to look at tourism as an economic, and not just social, phenomenon.

The World Travel and Tourism Council was established in 1990 to supervise the industry and to standardise its activities.

The Department of Tourism, SSA and the SARB created a satellite office for the WTTC in South Africa. This office is engaged in ongoing research on the contribution of tourism to the South African economy. It uses the research and recording methods, indicator specifications and computer systems developed by the WTTC.

SSA compiles a Tourist Satellite Account (TSA).

### DEFINITION

- In general tourism involves people moving from their usual place of residence to a destination where they make use of the facilities and take part in activities.
- The definition has THREE important dimensions:
  - It is a movement of people, and their stay in different places or destinations. o Two elements of tourism: the journey to the destination and the stay (including the activities people participate in at their destination).
  - Both the journey and the stay take place outside the usual environment or normal place of residence.
  - For the purpose of international comparisons, a more comprehensive definition is used. This definition states that:

**Tourism is the activities of people travelling to and staying in places outside their usual environment for no more than one consecutive year for leisure, business and other purposes not related to an activity remunerated from within the place visited.**

- According to this definition people can be tourists in their own country and in other countries.
  - Within their own country they are referred to as domestic tourists.
  - In other countries they are referred to as foreign tourists.
- Domestic tourism is more difficult to measure than foreign tourism.
  - Foreign tourists have to pass through customs and immigration checks when they enter a country – this is where they are counted and where information about them are obtained.

- Domestic tourists do not pass through similar checkpoints where they can be counted. They are counted when they book into hotels and other places of accommodation, or go through control posts at nature reserves, for example.
- To measure international flows of tourists out of and into countries we call them outbound and inbound tourists. South Africans departing from one of our international airports are outbound tourists. Foreigners arriving are inbound tourists.

## TYPES OF TOURISM

Tourists travel for various reasons. Reasons why people travel include:

Leisure and recreation:

- This involved going away on holiday, doing sports or visiting friends and family.
- o Cultural Tourism:
  - Tourism where visitors are given the opportunity to experience cultural and traditional community life of a country's inhabitants.
  - Visiting museums, art galleries, architectural attractions (churches, mosques and cathedrals and other buildings and structures).
  - Attending festivals, sports events and cultural events (religious events, pilgrimages and dancing).

Ecotourism:

- Tourism where people visit places where they can experience the diverse natural beauty of a country.
- Visiting natural areas (also underwater), wilderness areas (Drakensberg mountains), scenic attractions, flora and fauna (vegetation, forests and wildlife).
- Enjoying the climate, sunshine, the sea, a river or a lake.
- This is regarded as the fastest-growing segment of the tourist industry.

Business and professional tourism:

- Travel to a country for business purposes.
- Attending meetings, exhibitions and conferences, participating in missions (e.g. investigating housing in an area), incentive visits (travel agents that are invited to experience a resort), visiting factories and businesses for learning and information.

Paleo-tourism:

- Tourism where tourists visit sites of archaeological significance, such as the Cango caves at Oudtshoorn.

Adventure tourism:

- This has to do with outings of a specific adventurous nature like mountain climbing, abseiling and 4 x 4 routes.

Other:

- Studying, attending family business and receiving medical treatment.
- The term medical tourism is often used when people travel to have an operation, receive medical treatment or have cosmetic surgery done.
- Treatment and relaxation at spas and natural synthetic springs are also part of this market.

- Sustainable tourism is tourism that attempts to make as low an impact as possible on the environment and local culture while helping to create employment for the local people.
- Tourists travel because they have a demand for a specific experience. This represents the demand-side of tourism. If we focus on the businesses that want to satisfy this demand, it represents the supply side.

## THE SUPPLY-SIDE OF TOURISM (TOURIST INDUSTRY)

- Consists of all the businesses, organisations and facilities that serve the specific wants and preferences of tourists. Most of them are in the service industry.
- These businesses include the following:
  - Hotels, guest houses, bed and breakfast accommodation, restaurants, camping sites, resort residences (huts, chalets), recreational facilities and casinos.
  - Retailers selling travel accessories (bags, camera accessories, memory cards and batteries), souvenir vendors, chemists, printers (of tourist magazines) and craft traders.
  - Hotel schools, tourism education programmes, tourist instructors, recreation and game and nature part services, game farms.
  - Tour guides, travel agents, information centres, game rangers, housekeepers and food and beverage distributors.
    - Car hire businesses, transport services (taxis, buses, trains, airlines and shuttle services).

Tourism is not a straight-forward service industry such as the other components of the tertiary sector. It differs from the other services industries in the following ways:

- Tourism can impact both positively and negatively on indigenous communities.
- Some inputs into the tourism industry often involve non-price elements, such as viewing the scenic beauty of the area or walking on the beach.
- Tourism affects and is affected by the country's natural environment and basic infrastructure.
- Tourism is a very broad concept and is a combination of several industries as it includes a range of services and service providers.
- Tourism has a complex interaction with a variety of other services such as transport, accommodation, travel agencies and food and beverages. It also affects recreation, entertainment, catering and retail services (such as car rental, travel insurance, souvenir shops, informal markets and ordinary retail shops).



## MEASURING TOURISM

- Measuring the contribution of tourism to the economy is not simply a matter of recording the number of tourists visiting a country in a given period.
- Quantitative statistics, such as the number of arrivals and overnight stays are used to indicate the scope and growth of the tourist industry.
- The following key indicators are measured:
  - Volume – the incidence of domestic travel and how many trips are taken.
  - Value – The amount spent annually by domestic tourists.
  - Number of bed nights – The number of nights spent in various establishments.
  - Provincial distribution – The distribution of volume, value and bed nights between the nine provinces.
  - Seasonality – The times of the year that people travel.
  - These measures do not, however, indicate how the value of tourism affects the macroeconomic aggregates, such as national production and national income.
- One of the difficulties in measuring tourism to national output is that industries in South Africa are classified according to the goods they produce, whereas tourism is a consumption-based concept that depends on whether the consumer is a domestic citizen or a foreign visitor.
- Tourism is defined by the characteristics of the consumers – the tourists – at the moment of consumption. When they visit the country their consumption includes tourist goods such as accommodation travel services, but also includes other non-tourist goods such as retail trade.
- This makes it difficult to accurately calculate the amount of money tourists spend in the country.

For an activity to be classified as tourism it should comply with the following:

- There should be a purpose for the visit and the activity and this could be holidaying, business or other purposes.
- No remuneration should be earned from within the place visited. If a person is earning an income it simply means that person is employed.
- The minimum length of stay should be one night. Visitors who do not stay overnight are called same-day visitors.
- The maximum length of stay should be less than one year.
- The travelling distance should be more than 160 km away from the person's normal residential environment.

## REASONS FOR THE GROWTH IN TOURISM

- Inbound tourism – foreigners that come into the country from other countries.
- Outbound tourism – people from South Africa travelling to a destination outside the borders of their country.
- Domestic tourism – travelling by residents of a country within their own country.
- Internal tourism – domestic tourism and outbound tourism.
- International tourism – Travelling by people outside the borders of their own country. It includes inbound tourism and outbound tourism.

## FOREIGN TOURISM

Tourism is the fastest growing industry in the world, and also in South Africa. The factors contributing to an increase in the growth of international tourism are as follows:

- Wide range of tourist attractions in South Africa:
  - Diverse cultures, world-renowned attractions, numerous special interest activities, unparalleled scenic beauty, spectacular natural wildlife, unspoilt wilderness areas and a pleasant climate.
- An increase in disposable income
  - There is a worldwide tendency of growth in income levels and disposable income of households.
  - Individuals have more leisure time and money to travel.
  - This has caused an increase in the demand for travelling for tourism purposes.

### A reduction in working hours

- This leaves people with more leisure time to travel

### Improved political climate

- Because of the political history of South Africa, a large part of the population did not have access to travel and tourism in the country in the past.
- Since 1994 the previously disadvantaged have also become tourists and travellers.
- The peaceful transformation in the country and the lifting of sanctions has led to a tourist boom in South Africa.

### Increase in economic activities

- An increase in economic activities in South Africa has led to businessmen travelling between countries more regularly.

- There has also been an increase in business conferences and trade fairs. o South Africa has outstanding conference and convention centres, as well as exhibition, sporting and medical facilities.
- South Africa has become a major business centre for the rest of the African continent.
- Improved transport facilities and infrastructure o Better, cheaper and more diverse transport facilities make it easier for tourists to travel. o Roads, airports and travel agencies throughout the country have improved.
  - Lots of resources have been devoted to the upgrading of airports, local transport infrastructure and hotels, aimed mainly at the international tourist market.
  - International flights are becoming more regular and more affordable.

#### The development in communications and media technology

- The constant development in media technology, such as television, smart phones, the internet and social media brings the world closer to the better informed customer, creating new opportunities for the industry.
- This technology allows any family in any country in the world to explore tourist destinations.
- Because people are more aware of opportunities in other countries, they will visit those countries more often to satisfy their leisure needs.
- People are able to arrange all aspects of their travels through the Internet.

#### Increases in advertising and promotion

- Through advertising people are made aware of travel destinations.
- Improved marketing opportunities have led to an increase in cultural, eco- and paleotourism, for example advertisements in printed media and travel programmes on television encourage people to travel to popular destinations.
- Governments of many developing countries have targeted the tourism sector as a possible alternative low-cost source of growth. They are doing this to compensate for the decline in the agricultural and manufacturing sectors in their countries.
- Awareness of the benefits of holidays and travel o Travel was previously viewed as a luxury and mainly aimed at leisure activities, but this perception is starting to change.
- More and more, travel is seen as a way to enhance people's knowledge and understanding of the world and how it works.
- People are spending more time with family, travelling more and pursuing leisure and sport activities that may include travel.  
Ease of obtaining foreign exchange and making payments o Payments can be made internationally with most credit cards.

#### Globalisation

- People are better informed about other countries and destinations. o Increased international access, cheaper flights to South Africa and a weaker exchange rate has benefited foreign tourists.

#### Improvements in administration

- Customs and border control are more user-friendly through the utilisation of new technology.

## DOMESTIC TOURISM

Unlike many other developing countries, SA has a strong and well-established domestic tourism industry. The factors that contribute to the steady growth in domestic tourism are as follows:

- The range of tourist attractions in the country is extremely wide:
- Scenic beauty, natural wildlife, unspoilt wilderness areas and a pleasant climate complemented by a well-developed accommodation and transportation infrastructure.

Economic growth and economic development have resulted in improved income levels:

- Increased disposable income means that more people can afford to travel. o The growing affluence among sectors of the black population has boosted the local holiday tourist market.

Improved infrastructure:

- Competing low-fare airlines, improved bus and minibus services and road networks contributes to increased domestic tourism.

Many South Africans cannot afford to travel abroad:

- These people tend to focus almost entirely on domestic travel.
- Kwa Zulu Natal is the principal destination, with Western Cape second.

Socio-economic factors:

- Migrant workers in cities travel home to maintain ties with family in rural areas. o Friends and family also travel to visit each other.
- Increased travel for business purposes and for religious purposes.

Some tourists have substituted foreign tours for domestic tours and holidays:

- The high cost of international travel, the threat of terrorism in tourist destinations and the increasing occurrence of natural disasters makes people nervous about international travel.

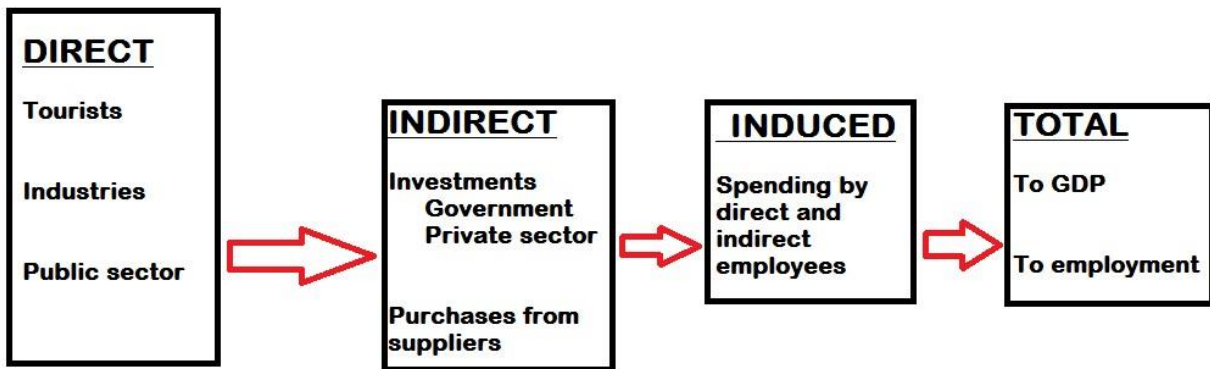
Increased domestic business and sports market:

- Sport plays an integral part in most South African families.
  - o Big local or international sports events have led to an increase in domestic travel for leisure and entertainment.
- People also travel for religious purposes to certain areas of the country.

## THE EFFECTS OF TOURISM ON THE ECONOMY

### GROSS DOMESTIC PRODUCT (GDP)

- The tourism industry impacts more on the service industry than on agriculture or manufacturing, although there are upstream effects, for example agriculture provide food to restaurants and manufacturing provides vehicles for transport.
- Tourism therefore affects the GDP both directly and indirectly.
- The World Travel and Tourism Council (WTTC) explains direct, indirect and induced contributions:



- The **direct contribution** of travel and tourism reflects the internal spending on travel and tourism by residents and non-residents for business and leisure purposes, as well as industries' direct spending on accommodation, food, retail, transport and destination services, and the public sector's spending directly linked to visitors such as cultural (museums) or recreational (national parks) services. **Direct expenditure is therefore the expenditure of tourists on tourist related services.**
- The **indirect contribution** is expenditure by people supplying goods and services to tourists and includes:
  - Travel and tourism investment spending by government and the private sector, such as the purchase of new aircraft and construction of new hotels, resort area water and sanitation services etc.
  - Purchases from suppliers of goods and services by the sectors dealing directly with tourists – including purchases of cleaning services by hotels, of fuel and catering services by airlines, and IT services by travel agents.
- The **induced contribution** measures the spending of those who are directly or indirectly employed by the travel and tourism industry. It is the increase in consumer spending that result from the additional personal income generated by the direct expenditure (e.g. hotel worker uses his wage to buy goods and services).

#### Indirect contribution

- Tourism is a service-based industry and has been partly responsible for the service sector's growth in South Africa over recent years.
- In developing economies the sector is responsible for around 40 % of GDP, while it is responsible for more than 65 % of GDP in developed economies.
- In South Africa it is similar to that of developed countries – services contributed more than 67 % of GDP in 2011.

#### Direct contribution

- To really plan for the economic development of the tourism sector it is important to know the amount of its total direct contribution to the economy.  
SSA shows that in 2010 inbound tourists contributed R69 billion and domestic tourists R99 billion amounting in total to R168 billion.
- This is about 3 % of South Africa's GDP. If the indirect contribution is added, tourism adds 7 % to the GDP.

### EMPLOYMENT

- Tourism has a major effect on employment. Directly and indirectly 9 % of South Africa's employed people were in the tourism industry. This amounted to 1.18 million workers in 2011.
- Tourism is the world's largest generator of jobs for the following reasons:

#### Tourism is labour-intensive:

- It has the lowest ratio of investment to employment creation.
- This means that more jobs can be created with every unit of capital invested in tourism.
- Many tourist activities are therefore within the reach of small operators. o Tourism employs many skills:
- There is room for almost any skill in the tourist industry.
- From accountants and hairdressers to tour guides and trackers, the tourist industry draws upon numerous skills.
- The potential for on-the-job training is significant.

#### Tourism can provide immediate employment:

- Many jobs can be created within a short period of time.
- For example if one quarter of tourist accommodation establishments in South Africa start to offer live entertainment to guests, thousands of entertainers could be employed within days.

#### Tourism provides entrepreneurial opportunities:

- Tourism accommodates informal sector opportunities, from craft and fruit vendors to pavement vendors, chair rentals and others.
- Many economists believe that tourism has a larger multiplier effect than other spending.
- This is because tourist spending spreads through so many sources: hotel accommodation, food and beverages, shopping, entertainment, transport, income for hotel staff, taxi operators, shopkeepers and suppliers of goods and services.

- The current focus of government is on the sector's potential to create entrepreneurial and employment opportunities for the historically disadvantaged people.

## POVERTY

- Employment provides income for households and reduces the level of poverty.
- The DTI is involved in poverty-relief projects that promote the development of community owned tourism products and services. They also facilitate the establishment of tourism infrastructure.
- Tourism is one of the fastest and more effective redistribution mechanisms in development.
- Tourism brings development to the poor in rural areas. Many of the best tourist attractions are located in the rural areas and not in city centres.
- These rural areas rely on tourism as their main source of income and development normally takes place around tourist attractions.
- It allows rural people to share in the benefits of tourism, promoting a more balanced and sustainable form of development.
- Tourism provides an alternative to urbanisation – permitting people to continue a rural family lifestyle, empowering both women and the youth.
- Tourism offers opportunities to diversify sources of income for poor people:

Allowing them a stake:

- For example to start and operate a small-scale tourism businesses around community assets (forests, parks and rivers) and to establish SMME's to provide services (retail, transport and accommodation).

Empowering them:

- For example to exploit opportunities of on-the-job and other training. o Creating partnerships:
- Linking up with mainstream tourism businesses supplying goods and services.

## INVESTMENT

- An adequate physical, economic and basic services infrastructure is necessary for tourist destination areas, which means that we need investment in the following areas:
  - ✓ Transport infrastructure:
    - For example roads (including streets and pavements), railway lines, airports, harbours and car parks.
  - ✓ Communication infrastructure:
    - Including telephone lines, electronic signal stations, computer connection capacity, radio and television services and newspapers.
  - ✓ Energy infrastructure:
    - Such as electricity and liquid fuels.
  - ✓ Basic services infrastructure:
    - For example clean water, refuse removal, sanitary services and storm water drainage.

- There are examples where lack of adequate economic and basic services infrastructure will prevent growth in tourism – for example restricted water supplies.
- Economic and basic services infrastructure doesn't normally generate income and is treated as a public investment in most tourist developments.
- Seasonality is a major problem for infrastructure development and most construction is planned to meet a percentage of the peak load rather than the peak.
- The importance of different transport infrastructure is shown by the modes of transport used by tourists: By far the largest number travel by road. Rail and sea travellers account for much smaller numbers.
- Improvements in infrastructure will also benefit the local communities.

## EXTERNALITIES

The tourist industry can have both positive and negative impacts that extend well into the future.

- Externalities can be defined as costs or benefits that arise from economic activities that are not reflected in the actual prices of transactions. They refer to the economic side-effects of certain transactions.
- While tourism attracts large amounts of revenue, it can also cause undue environmental damage that can harm the very foundation on which it depends.
- Like all economic activities, tourism uses resources and produces waste. It also creates environmental, social and cultural costs and benefits in the process.
- Rapid growth in tourism aiming at short-term benefits usually results in more negative than positive effects. These include the degeneration of traditions and cultural values, and environmental damage to sites and natural areas.
- Pollution and waste are generated by tourist facilities.
- Transportation and tourist activities themselves are identified as a major source of environmental impacts.
- With the rapid growth in population, improved living standards, increasing free time and the expansion of transportation systems, global tourism is expected to grow.
- Over the next two decades the number of people looking for holiday destinations away from their own country is expected to triple.
- As a result of this expansion, popular tourist sites will face increasing pressure.
- Tourism has the potential to attract revenue for a country and reduce poverty. It can also lead to conservation of both cultural and natural assets, but it is unable to do so if there is no environmentally and culturally conscious planning.

The economic benefits include the following:

- Tourism stimulates the creation of employment, particularly in the service sector, such as waiters, hotel staff, retail outlets or tour guides.
- It creates and improves infrastructure through the building of hotels, roads and other facilities, which also creates jobs.
- It helps to develop and maintain rural services such as transport, village shops and other services. o In increases the demand for local food and crafts, creating additional income for communities.



- Local people can enjoy increasing wealth, a better public health system and more infrastructure. They can also enjoy pollution control and clean beaches aimed at tourists and benefit from the cultural exchange with tourists.

The negative effects on the local people and the economy include the following:

- Can lead to increased inequalities between groups in the country because rural people do not always benefit fully from it. Less educated people seldom gain any benefits.
- It can cause local prices to increase because tourists often pay more for goods and services, which is often beyond what local people can afford.
- High levels of tourism can lead to traffic congestion, pollution, litter, increased CO<sub>2</sub> emissions, increased water consumption and crime.
  - o Tourism can change the appearance of a community through the development of more shops and hotels.
- A number of countries are now aiming to achieve ethical and sustainable tourism – this is tourism that will respect the traditions and customs of the area, and seek to plough back some of its earnings into the local community, rather than inflicting environmental damage.
 

Tourism should be conducted in such a way as to protect the area as an attractive tourist destination.
- It is necessary to develop a tourism strategy – this will maximise the external benefits and minimise the external costs of various externalities.

## ENVIRONMENTAL EFFECTS



- Any form of industrial development impacts upon the physical environment in which it takes place.
- Tourists have to visit the places of production in order to consume the output. It is inevitable that tourist activities will be associated with environmental impacts.
- Tourism creates environmental stress. The four main environmental stressor activities are:

Permanent environmental restructuring:

- Major infrastructure such as highways, airports and resorts.
  - o Waste product generation:
- Biological and non-biological waste that damages fish production, creates health hazards and detracts from the attractiveness of a destination.

Direct environmental stress caused by tourist activities:

- The destruction of coral reefs, vegetation and dunes.
  - o Effects on population dynamics:
- Migration and increased urban densities accompanied by declining populations in other rural areas.

Positive effects:

- Tourism benefits the environment when South Africa uses tourism as a reason for environmental conservation, such as our national parks. Our

World Heritage Sites are international tourist attractions and they have strict rules for preservation.

- There will be better protection of rare plants and animals because of the interest that tourists have in them.
  - Tourism also provides educational opportunities to learn about protection of the environment.
- Negative effects:
    - Increase in greenhouse gas emissions
    - o Increase in demand for water, which can lead to water shortages in dry areas.
    - Increased traffic in conservation areas can negatively affect wildlife and the ecosystem, which lowers the quality of life for residents as well as tourists.
    - o An overload of construction and development projects for tourism can damage cultural resources, deplete wildlife and lead to loss of land usage.
    - Noise pollution in neighbourhoods close to airports.
    - o Depletion of fish stock in local waters due to additional demand.
    - o Air pollution caused by traffic jams.
    - o Traffic congestion in tourist areas during holiday seasons.
    - o Tourism creates additional waste and litter that has to be disposed of.
    - o Construction of roads in a scenic forested area.
    - o Hotels built on a pristine stretch of beach permanently damage the environment.
    - Tourists might want to ride in motor boats on a quiet lagoon or drive beach buggies on dunes, destroying the natural ecosystems for good.



## THE BENEFITS OF TOURISM

- South Africa benefits directly from tourism because of the growth in the GDP, employment, infrastructure development and exposure to foreigners.
- A major spin-off benefit is the foreign exchange that is earned. Foreign tourists bring foreign currency into the country in the same way as other service exports.
- In 2011 tourism represented about 70 % of foreign exchange earnings from service exports.

### HOUSEHOLDS (Individuals)

- Households share in the general prosperity of South Africa to which tourism contributes. They benefit in three ways:

#### Income:

- Spending by tourists means income to households that are directly involved in the tourist industry because of salaries and wages earned through employment in the tourism industry.
- When these people then spend their income in their community, they contribute to the local economy and other households will benefit from this.
- People that are indirectly involved in tourism as employees also earn salaries.
- o Infrastructure:
  - Most of infrastructure created for use by tourists is also available for use by local people, e.g. roads, hotels, telephone lines, water supply and electricity.

#### Skills:

- Tourism requires a variety of skills, for which education and training is needed.
- Travel and Tourism has been taught as a subject in schools since 2000.
- The Culture, Arts, Tourism, Hospitality and Sport Sector Education and Training Authority (Cats SETA) offers learnerships for a number of jobs required in tourism, e.g. tour guides, travel agents and chefs.
- Higher education institutions offer a number of different kinds of travel and tourism programmes, diplomas and degrees.
- A spin-off of tourism is also the exposure to foreign cultures. It impacts on cultural and social knowledge and enjoyment.
- Tourism can reduce poverty for households because:
  - There is a wide variety of different jobs in the tourist industry;
  - High levels of skills are not always required;
  - Tourist businesses can be started within minimum investment;
  - Tourism is labour-intensive and can create many jobs;

## BUSINESS

- Economic and basic services infrastructure is usually provided by the public sector. This is used as a foundation for a superstructure.
- In tourism, such a superstructure consists of businesses that provide accommodation, transport, built attractions, retailing and recreation services. They are normally private sector activities and make up the profit-generating element of a tourist destination.
- Although the norm is for the public sector to provide infrastructure as a prerequisite for private sector development of the superstructure, in many cases combinations of public and private sector finance are used to develop destinations.
- Tourism therefore stimulates the construction industry, the manufacturing sector as well as the recreational sector.
- In South Africa the PPP's (Public-Private partnerships) are the corporate form of this.
- The public sector also provides a range of financial incentives for private sector tourism investment (grants, subsidies, loans, tax rebates).
- Apart from the traditional opportunities provided in the formal sector, there are many informal and less traditional opportunities. These serve as stepping stones for previously neglected groups in the tourism business:
  - Entertainment, laundry and transportation services; o Car rental, arts, crafts and curios sales;
  - Walking tour guides and tours of scenic places;
  - Teaching of African languages, customs and traditions;
  - Eating places that emphasise local cuisine and guest houses;
  - Beach massages, manicures, pedicures and chairs and umbrellas for hire;
- Tourism products are becoming more diversified, encouraging entrepreneurship. Many new tourism businesses are being developed by local communities.
- Tourism stimulates the business environment and helps achieve certain socio-economic objectives, such as development of entrepreneurs, BEE and SMME development.
- Tourism also offers entrepreneurial opportunities in the informal sector.

## GOVERNMENT

- The main benefit to the South African government is through the levying of taxes.
- Certain taxes are levied specifically on the tourist industry. These taxes serve two purposes:

To recover external costs:

- Most common reason for levying a tourist tax.
- It serves to recover from tourists an amount that is added to the supply price.
- The amount is supposed to compensate the host community for providing infrastructure, basic services and public amenities to tourists.

To raise revenue:

- Tourists are part of the tax base of the country, but they are not voters in the destination country.
- Levying a tourist tax will not cost the government votes in an election.
- The most common tourist taxes are airport departure taxes, air ticket taxes and taxes on hotel room occupancy.
- Casino's is also a very profitable source of tax income – the government will take a certain percentage of the amount of money taken from the slot machines and the tables.
- Tourists also pay all the normal expenditure taxes such as VAT, excise duties and customs duties.  
However, on their departure from the country, tourists can reclaim all the VAT that they paid. They need to submit invoices or cash slips indicating the total amount of VAT paid. Many tourists don't reclaim the VAT because they don't bother will collecting the cash slips.
- Tourism also enables the government to advertise the country's tourism potential – it shows the country off in a good light. This, along with good service delivery can create a very good image of the country.
- It is also an important foreign exchange earner and boosts our reserves directly when tourists pay for goods and services in dollars, euros, pounds and other foreign currency.
- It also helps to create jobs at little cost to the state, especially in the informal sector.
- Tourism enables the government to achieve its socio-economic objectives of informal sector growth, black economic empowerment and SMME development.

## INFRASTRUCTURE

- Adequate and well-maintained physical infrastructure is essential for tourist destinations.
- The infrastructure is normally shared between the residents and visitors.
- The government has prioritised economic infrastructure, including elements such as harbours, beaches, rivers and lake access to promote growth in tourism
- Most corridors have tourism as an important focus area.
- PPP's are often used for the development of infrastructure.
- In addition to physical infrastructure, tourists as well as residents also require social infrastructure, e.g. ambulance services, medicines, clinics and hospitals, police protection and information services.
- Tourism is a receiver of government funding. Most governments spend vast amounts on infrastructural development in their endeavour to encourage increased volumes of tourists.

## SOUTH AFRICA'S TOURISM PROFILE

### TOURIST GENERATING COUNTRIES

- Africa provides 74 % of the tourists coming to SA.
- From this, 97 % are from SADC countries.
- Many of these people come to buy food and other consumer goods, and most of them do not stay over in official accommodation. It is assumed that they stay with relatives or friends.
- Tourists from outside Africa bring the money in. For most of them, SA is a holiday destination.
- Europe, especially the UK, is our biggest generator of tourists.
- The highest growth was from countries outside Europe and Africa, particularly from the USA, Australia and Asia.

## PURPOSES

- Foreigners visit South Africa for the purpose of vacation (94.3 %) and business (2 %).
- In 2011, 53 % were male and 47 % were female.  
More than 82 % were between 15 and 64 years of age.
- Domestic as well as international tourists spend a lot of their time and money on three key attractions: the coast, wildlife and the country's mountains, deserts and bushveld.
- Much of the natural environment that tourists visit is conserved or protected.
- Many tourists also visit South Africa to visit friends and relatives, for shopping, for sports and recreation, medical and religious reasons.

### Business Tourism:

- South Africa is the ideal destination for international congresses and conventions.
- According to the 2011 SATOUR Annual Report, business tourism is seen as the key to further growth in the sector.
- It sustains more than 300 000 jobs in the country and pays more than R8 billion in salaries and R6 billion in taxes every year.

### Eco-tourism:

- South Africa's wildlife is far more varied than just the "big 5" and is supported by an extraordinary biological diversity.
- Three of our 8 UNESCO World Heritage sites are natural sites, while one is a mixed cultural/natural site.

### Cultural tourism:

- South Africa is home to diverse cultures, each with its own distinctive art forms, music and traditional rituals.

### Paleo tourism:

- South Africa boasts numerous sites of great archaeological significance.
  - o The best known of these are the Sterkfontein, Swartkrans and Kromdraai sites that make up the Cradle of Humankind one of the world's richest concentration of fossils.

### Adventure tourism:

- South Africa offers 3 000 km of coastline along with mountain ranges.
  - o This diverse terrain, together with a climate suited to outdoor

activities, makes is popular for climbing, surfing, diving horseback safaris, mountain biking and river rafting.

## SOUTH AFRICA AS A PREFERRED DESTINATION

- Tourism has become an extremely competitive business. The competitive advantage of tourist destinations is no longer natural, but increasingly man-made. It is driven by technology, information and innovation.
- It is not simply the stock of natural resources of South Africa that will determine the country's competitiveness in tourism, but rather how these resources are managed and to what extent they complement man-made innovations.
- In this regard, South Africa scores well, as shown by the following:
  - The well-established network of national parks, which covers 6.3 % of the surface area of the country, and other private nature reserves are very much on trend with the demands of the environmentally sensitive visitor.
    - o Some South African companies are leaders in global "best practice" in eco-tourism, boosting South Africa's name internationally.
  - The recent political transformation of South Africa has opened our tourism potential to the rest of the world and to the previously neglected groups in society.
  - South Africa is highly diverse in terms of its climate, culture, tourist activities and infrastructure and is a preferred tourist destination. The country caters for every tourism niche – from business, eco- and cultural tourism through to adventure, sport and paleotourism.

## LOCAL DESTINATIONS

- A destination brings together all aspects of tourism, including demand, transportation, accommodation, supply and marketing.
- Destinations and their images attract tourists, motivate the visit and therefore energise the whole tourist system.
- The richness and variety of destinations contribute to the success of tourism.
- Although South Africa does not lack these, tourist destinations are not well spread.
- The geographical distribution of tourists is not even - 55 % of inbound tourists prefer Gauteng and the Western Cape as destinations.
- Gauteng is preferred for shopping and business, particularly by tourists from neighbouring countries.
- Western Cape is preferred for its scenery and leisure activities, particularly by tourists from European and other developed countries.
- Most foreign visitors to South Africa are first-time visitors who stay for relatively short periods – about 10 nights.
- Foreigners attending conferences stay for about 5 nights. However, some of them do come back for a holiday at a later stage.
- Destination stakeholders are all those individuals and groups who have a vested interest in tourism at the destination. They are the owners, workers

and the suppliers of goods and logistics. However, local authorities, provincial and national government are also important stakeholders because they provide amenities, infrastructure, and safety and other services.

- The most popular tourist destinations in South Africa as voted for by foreign tourists include: Victoria & Alfred Waterfront, Table Mountain, Cape Point, Western Cape wine routes, The Garden route, Kirstenbosch National Botanic Gardens

Other popular destinations include: The Kruger National Park, Durban beachfront, Johannesburg, Soweto, Blyde River Canyon Nature Reserve, Wild Coast, Unesco World Heritage Sites (Robben island, Cradle of Humankind, Mapungubwe Cultural Landscape, Richtersveld Cultural and Botanical Landscape, uKhahlamba/Drakensberg Park, Cape Floral Region, iSimangaliso Wetland National Park and Vredefort Dome)

## DOMESTIC TOURISTS

- Domestic tourists undertook a total of 26.4 million domestic trips in 2011.
- However, the number of adult South Africans who travelled domestically grew to 13.9 million.
- In 2011, the average amount spent per domestic trip grew to R780 per trip (from an average of R710 per trip in 2010).
- More South Africans are travelling for leisure purposes.

## INDIGENOUS KNOWLEDGE



- Indigenous knowledge (IK) is the local knowledge – knowledge that is unique to a given culture or society. It often forms the basis for local-level decision making.
- Indigenous culture – the traditions, architecture, rituals, music and artwork of local or regional cultural groups. This is a huge tourist attraction that was neglected in the past.
- Many cultures have come together in South Africa in the past 500 years.
- Because the indigenous culture in South Africa is so diverse and rich, it attracts millions of foreign tourists.
- These tourists are no longer satisfied with a passive experience. They seek authenticity and uniqueness at destinations.
- They want to understand the indigenous culture, history and environment, and how local people live and work.
- The IKS attractions in South Africa include:
  - Cultural villages such as Shangana in Mpumalanga, Basotho in Free State and Simunye Zulu Lodge in Kwa Zulu Natal, where guides explain and demonstrate storytelling and indigenous knowledge practices.
  - Cultural and township tours such as to Soweto to visit freedom struggle sites, experience life at home with a household and eat at a shebeen or township restaurant.
  - World Heritage Sites is of particular importance here. They articulate several of the aspects in which tourists are interested. Examples are:



- ✓ Mapungubwe, the ruins and archaeological finds of an early Stone Age settlement in Limpopo.
- ✓ Vredefort Dome (two-billion year old meteorite impact site in the Free State and North West).
- ✓ Sterkfontein caves (with the skull of Mrs Ples, suggesting that Africa is the cradle of humankind).
- ✓ Robben Island (where political prisoners like Nelson Mandela was incarcerated).
- ✓ Richtersveld Cultural and Botanical Landscape. o Our environmental heritage sites represent the extreme of our indigenous environmental uniqueness. We have three such sites:
  - ✦ iSimangaliso Wetland Park, formerly known as the Greater St Lucia Wetland Park (boasting five different eco-systems).
  - ✦ Cape Fynbos Region (including Table Mountain and the Agulhas National Park).
  - ✦ uKhahlamba Drakensberg Park (including almost the entire Drakensberg mountain range).
  - ✦ Arts and cultural festivals such as the National Arts Festival held in Grahamstown, the Hermanus Whale Festival, Awesome Africa Music Festival and Macufe African Cultural Festival.

## POLICY SUGGESTIONS

- The Department of Tourism leads and directs tourism-policy formulation at national level. These policies are aimed at growing the tourism industry.
- The Department works in partnership with SA Tourism (SATOUR), the tourism industry and other relevant stakeholders, such as the provinces, NGO's, civil society, labour unions and businesses.
- It aims to ensure and accelerate the physical delivery of tourism benefits to all South Africans.
- SATOUR is responsible for the marketing of the South African tourist industry – it is a public enterprise.
- The Tourism Business Council of South Africa (TBCSA) is the official umbrella organisation for the Travel and Tourism private sector in South Africa. It represents travel and tourism and seeks to be a conduit to the public sector. It lobbies and endeavours to influence government policies and decisions in the interest of the travel and tourism sector.

### **TOURISM – POLICY SUGGESTIONS:**

#### **MARKETING**

- The marketing and promotion of South Africa's tourism has both an international and a local dimension.
- South Africa's tourist attractions can gain from the promotion of South Africa abroad as a tourist destination.

- Similarly, tourist attractions in all the provinces can gain by promoting the advantages of tourism in South Africa. Such promotions are called generic promotions – they do not mention specific tourist attractions.
- SA Tourism was created to promote the generic dimensions of tourism, both internationally and nationally:

In an international context:

- Generic marketing endeavours to have South Africa included as a tourist destination when tourists consider their itinerary or when travel agents present their clients with options.
- Non-specific criteria are emphasised, such as value for money, the world in one country, palaeontology, cultural diversity, climate, safety, friendliness, cleanliness and tranquillity.

In a national context:

- Generic marketing tries to persuade all citizens to travel when they take holidays, to spend holidays in their own country, to take more than one holiday a year, to consider the wide variety of destinations and to try group tours.
- Other role players (owners and stakeholders such as cultural groups) promote specific purposes and destinations:

Purposes:

- Conferences, shopping, business, medical, cultural, biodiversity, hiking, sport and recreation.

Destinations:

- World Heritage Sites, Cape Town's waterfront, Kruger National Park, Cango Caves, Big Hole at Kimberley, Wild Coast, Wild Frontier, accommodation, transport, restaurants, recreation and sport events.
- There is a definite need for government to involve itself heavily in the marketing of tourism, locally as well as internationally.
- Slogans such as "Discover South Africa ... Rediscover yourself" and "Whatever you are looking for, it's right here in South Africa" are essentially designed to market the country as a unique destination that combines a wealth of diverse culture, wildlife and scenic beauty.
- Advertising and media marketing are important to sustain demand in existing markets, as well as to generate demand from new markets and to promote new products. Marketing also aims to rectify any negative images of the country.

SA Tourism has launched various **campaigns** to reap the benefits of tourism, such as:

- The "Welcome campaign" in 2005 on the theme of "Tourism is everyone's business" to encourage all South Africans to be good hosts.
- The "Embrace, Enrich, Awaken, Experience South Africa" campaign in 2009 as a marketing communication project to promote tourism in South Africa.
- The "SADC 2010" joint campaign under the theme "1 Team, 15 Nations" that promoted investment projects in tourism among the 15 SADC member countries.
- The second "Adventurers Wanted" campaign of 2010 in collaboration with the National Geographic Channel for a global search for the world's top

adventurers. o The Minister of Tourism launched the domestic campaign in Cape Town in 2012 to encourage all South Africans to travel in their own country.

## INFRASTRUCTURE

- Tourist requires all kinds of economic infrastructure, social infrastructure and basic services.
- These are also of critical importance for the efficient functioning of the economy, irrespective of tourism.
- It is essential for infrastructure to be maintained properly for the sake of local citizens, domestic tourists as well as foreign tourists.
- When policy recommendations with regard to infrastructure and basic services concerning tourism are considered, the following basic considerations should have priority:

### More infrastructure:

- The magnitude of physical infrastructure should increase as the population grows, tourism increases and the economy expands.
- The carrying capacity of roads, railway lines, aeroplanes, harbours, airports and railway stations should be expanded continuously.
- Eskom should add capacity all the time.
- Water provision needs to be increased all the time.
- The inconvenience of bottlenecks and interruptions scares tourists away and damages our reputation as an international tourist destination.

### Upgrading:

- Where expansion is not possible, upgrading should be done.
- Dirt roads should be converted to tarred roads and railway sleeper and diner coaches upgraded to international standards.

### New technology:

- The newest technology should be implemented, for example in transport and communication.
- This is vital for businesses and individuals but it is also vital for effectively marketing, promoting and distributing travel and tourism products, services and information domestically and internationally.
- The accessibility and infrastructure of rural areas should be improved.
- If secondary roads (gravel and dirt roads) are properly maintained, domestic tourism will increase because most South Africans have a rural background and love to travel into the rural areas.
- A spin-off is that this will take many cars off the overloaded highways and reduce the number of accidents.

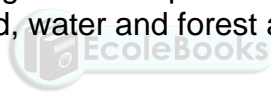
## EDUCATION AND TRAINING

- Service excellence is important, which includes all the contact points with tourists (immigration, transport, accommodation and financial institutions):

- The quality assurance programme aimed at tourism accommodation and conference facilities needs to be extended to include other aspects of the industry.
- Additional standards need to be developed to cover tourism activities, attractions and services.
- Greater efforts must be made to improve training of previously disadvantaged groups so that they can enter the industry with the correct standards of service.
- Improvement will be achieved by more tourism workers taking advantage of training courses such as a degree in tourism and hospitality, courses run by THETA, the South African College of Tourism course on running lodges and guesthouses and also professional field guide courses.
- Adequate education and training and awareness programmes are required to address deficiencies in the tourist industry in South Africa.
- These programmes need to address the shortcomings regarding the previously neglected groups in society in terms of job levelling in the industry.
- The Tourism, Hospitality and Sport Education and Training Authority (THETA) is the SETA currently conducting planning of education and training in this sector.

#### ENVIRONMENTAL MANAGEMENT

- Government is aware of the importance of ensuring that all aspects of the environment are managed in a responsible manner in terms of scarce resources such as land, water and forest and especially the heritage sites.



## Environmental Sustainability

The environment is the total of our surroundings – all the living and non-living thing with which we interact. It has a huge influence on human life – we need a healthy environment for our own survival. Exploitation of natural resources threatens the survival of future generations. In order to achieve environmental sustainability all countries need to promote conservation, secure ecological sustainable development and use our natural resources sparingly.

Sustainable development can be defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

### DEFINITION OF ENVIRONMENT

- Environment refers to the physical surroundings and physical conditions that affect people’s lives. It includes land, sea and the atmosphere and provides a flow of goods and services, such as the following:
  - ❖ Materials (for example soil, water, minerals and timber) and energy from fossil fuels, tides and winds.
  - ❖ Space, to produce food, erect buildings, develop communications and provide for sporting and recreation activities.
  - ❖ The “natural world” as a consumer good (in the sense of an amenity) in that it affords utility directly by providing fresh and clean air, water, sunshine, areas for walking, places for holiday safaris, nature studies, and the enjoyment of scenic and peaceful surroundings.
  - ❖ A dumping place for our waste.

### THE STATE OF THE ENVIRONMENT

- The environment is under pressure because human claims on the environment are more than what nature can provide for on a long-term basis
- These claims originate due to the following reasons:
  - Increasing population numbers – this is mostly because of the high birth rates in developing countries.
  - Excessive consumption – caloric food intake by people in developed countries are 30 % higher than what nature can provide on a sustainable basis.
- Pressure on the environment is caused by air pollution (CFC’s, lead, CO<sub>2</sub>), water use, toxic emissions from industry, hazardous waste generation, energy production and use, agricultural pollution, over-fishing, deforestation, soil erosion, over-grazing, municipal waste, and sewerage generation.
- The activities of humans put demands on the natural environment in two ways:

- Inputs – nature provides the resources for the living and working activities of people.
- o Outputs – the living and working activities of people produce waste that is disposed of in nature.

## POLLUTION

- Pollution is defined as the act of introducing a toxic substance into the environment, which is dangerous to human health and damaging to the ecosystem.
- Pollution is a by-product of human and economic activity and could be caused by, for example:
  - Domestic, industrial and agricultural waste material being discharged into the environment at a rate faster than it can be absorbed and/or broken down.
  - Gas emissions into the atmosphere.
  - The use of pesticides by farmers.
  - Radioactive materials leaking into the environment.
- Nature can take care of waste up to certain levels. It assimilates waste (for example solid waste is assimilated through decomposition), but the problem is the waste levels are too high and some waste include substances (like plastic) that are foreign to the natural environment. Then the environment cannot cope.
- Pollution therefore occurs when the waste resulting from human activity exceeds the natural environment's capacity to absorb it.
- Pollution is a negative externality in the production of goods and services – in other words pollution is a negative consequence of production and consumption which have a cost for society.
- The social cost of pollution is not carried by producers and does not affect their profits. Producers do not suffer any private cost as a result of the pollution so there is no incentive for them to decrease the amount of pollution they produce.
- Government has to intervene and establish laws and policies to prevent damage to the environment.

## Technology and pollution

- In the past, economic growth was pursued with very little concern about the negative externalities such as pollution.
- For example the burning of fossil fuels and other technologies that causes high levels of carbon emissions.
- We are now more aware of how much damage pollution can cause and efforts are being made to develop “clean” technologies (also known as green technologies) which have lower levels of toxic emissions.
- Technology can enable pollution to occur, but it can also facilitate a solution to the problem by providing alternative production techniques that are less damaging to the environment.

## Types of pollution

### Air pollution

- Air pollution occurs when toxic material is introduced into the atmosphere causing a change in the composition of air.
- Air pollution is caused by substances such as soot, dust, cinders and solid particles of any kind, gases, aerosols and odorous substances, tobacco smoke and exhaust fumes from cars.
- This is a severe problem, particularly in the larger cities.
- The following are negative consequences of air pollution:
  - **Poor health:** According to the World Health Organisation, air pollution is linked to a variety of health conditions such as asthma and lung cancer. It causes all kinds of respiratory problems.
  - **Greenhouse gases:** they trap heat within the earth's atmosphere and contribute to global warming. o **Global warming:** The accumulation of greenhouse gases in the atmosphere is causing the average temperature on Earth to rise. This causes climate changes which disrupts agricultural production and threatens ecosystems. Global warming also leads to catastrophes such as tsunamis and hurricanes.
  - **Ozone depletion:** the loss of ozone in the atmosphere is due to atmospheric pollution, especially carbon monoxide pollution.
  - **Acid rain:** when acidic chemicals such as sulphur dioxide are released into the air, it accumulates in rain, snow, fog and mist. When these gases react with rainwater, they produce acid rain, which can damage crops, trees and buildings, contaminate drinking water and harm human and animal health.

### Water pollution

- Water pollution occur when industrial affluent, agricultural and mining waste, sewerage and household waste are introduced into fresh or ocean water.
- The chemical composition of the water is altered as a result of these toxic substances and the quality of the water deteriorates.
- As the water becomes toxic, all the organisms living there are killed and the water can no longer be used for irrigation or drinking.
- The contamination of water poses a great health risk for many people who are compelled to use untreated water from rivers and ponds for drinking and washing purposes.
- Water pollution harms water animals and plants and leads to biodiversity losses.

### Land pollution

- Land pollution is caused when domestic or industrial waste material is dumped on the land.
- This causes the chemical composition of the soil to change and makes the land toxic.

- When land becomes toxic all the naturally occurring organisms in the soil are killed and nothing grows in it.
- The causes of land pollution are poor agricultural practices, increased mineral exploitation, industrial waste dumping and indiscriminate disposal of urban waste.
- Land pollution can also result from the use of chemicals in weed-killers and pesticides.
- The main types of land pollution are the following:

Solid and hazardous waste:

- This applies to cities in particular, which generate more solid waste than can be collected or disposed of.
- Uncollected refuse and garbage dumped in public areas can cause severe health problems and stench.

Soil erosion:

- This refers to the loss of valuable topsoil resulting from deforestation and flooding of productive farmland.

The disposal of toxic/hazardous waste

- The disposal of toxic waste, also known as hazardous waste, is a particular form of land pollution and presents particular challenges in both developed and developing countries.
- Toxic waste is any poisonous by-product of manufacturing, farming, sewerage systems, construction sites, motor vehicle garages, laboratories and hospitals.
- Toxic waste is often dumped or buried underground where it can contaminate soil and underground water supplies.
- Most countries have strict laws and regulations regarding the disposal of toxic waste.

## EROSION, DEFORESTATION AND DESERTIFICATION

Erosion:

- The process by which soil and rock are removed from the surface of the Earth and then transported away and deposited elsewhere.
- Erosion occurs as a result of natural processes (such as the movement of wind and the flow of water) and human activities (such as poor farming methods).
- It is estimated that South Africa loses about 500 metric tons of topsoil every year because of water and wind erosion.

Deforestation:

- The process whereby trees and forests are removed from the land and not replaced.
- As a result the land is no longer covered by trees and the natural ecosystem is destroyed.

Desertification:

- The process whereby grasslands are converted into deserts in which very little will grow.



- Desertification is the result of global warming, droughts and human actions such as over-grazing, poor farming methods, and stripping the vegetation for firewood.
- The degradation of the land disrupts normal agricultural activities, which in turn threatens food security.
- Food security is the term used to describe a situation that exists when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life.

## CLIMATE CHANGE

- Climate change is defined as any significant and sustained change in the normal weather pattern.
- Climate change may take the form of an increase or decrease in the amount of rainfall or in the average temperature.
- It disrupts ecosystems as well as agriculture and threatens both the natural environment and the lives of people.
- Climate change is sometimes caused by natural processes, such as oceanic circulation and volcanic eruptions.
- Climate change can also be the result of human actions such as air and land pollution.
- The consequences of climate change include the following:
  - Shifting weather patterns threaten food production because rainfall becomes unpredictable and erratic.
  - Rising sea levels (caused by melting of the solar caps) cause coastal freshwater reserves to be contaminated, killing fish in the process.
  - o Floods caused by heavy rainfalls threaten human lives and cause topsoil to be washed away, which causes erosion and desertification.
  - o Rising temperatures cause the spread of pests and diseases such as malaria, bilharzia, African sleeping sickness and yellow fever.

## CONSERVATION

- Conservation refers to the sustainable use and management of natural resources such as water, air, wildlife and earth deposits.
- Conservation involves the official supervision of natural areas (including their vegetation, soil, animals, rivers and other natural resources) in order to protect them through wise management.
- Human activity causes pollution and over-utilisation of the environment, so conservation is necessary – it will ensure that we keep enough resources for future generations.
- Conservation applies to both renewable and non-renewable resources.
- The conservation of renewable resources aims to ensure that they are not consumed faster than they can be replaced.
- Conservation of non-renewable resources aims to ensure that sufficient resources are kept for future generations.

### Conservation areas in South Africa

- South Africa is a signatory to the Convention on Biological Diversity – this requires that 10 % of the land area and 20 % of marine biodiversity should be conserved by 2010.
- There are a number of categories of protected areas in South Africa and, in 2011 about 6 % of our land surface area was under formal conservation through the system of national and provincial protected areas.
- Conservation is undertaken in national parks, transfrontier conservation areas, botanical gardens, nature reserves, marine reserves, World Heritage sites, biosphere reserves, reptile and butterfly sanctuaries, museums, buildings of special architectural and historical interest etc.

#### Aspects of conservation

- There is an opportunity cost – a green belt for instance, may reserve land for social use, yet it can increase the journey to work of those city workers who live beyond it.
- Externalities are often present. The roads to a nature park pass through some farms – the farmers have to deal with the noise, the air pollution and the disruption of their peace and quiet. Criminal activities might also increase.
- Self-interest has a short-term horizon – decisions can't be left entirely to the market forces, especially those concerned with estimating demand in the future, allowing for externalities, preserving stocks of renewable resources, and the impossibility of reversing wrong decisions.

#### Conservation of stocks

- If resources are utilised in excess of their capacity to reproduce themselves, supply falls to the point where prices start rising.
- This causes a contraction of demand and a search for substitutes.

- Such responses by the market help to conserve both renewable stock (such as trees for timber) and non-renewable stock (such as fossil fuels and minerals).
- However, some environmental resources are only renewable if the contraction in demand occurs soon enough to leave a stock that does not fall below the minimum necessary for recovery.
- Conservation here has to be concerned with limiting what is harvested in order to maintain a stable stock at least at this minimum level.
- South Africa has 31 protected wilderness areas.

#### Water conservation

- South Africa has a rainfall below the average rainfall of the world and the rainfall is also very unevenly distributed across the country.
- This places our country on the threshold of what is internationally known as a “water-stressed” country.
- For this reason, it is necessary to take appropriate measures in order to make provision for those months when large parts of the country are drought-stricken.
- Water is stored in large water reservoirs and dams across the country and the water levels are closely monitored in order to provide provincial governments with information to introduce water restrictions.

#### PRESERVATION

- Preservation is defined as any strategy undertaken to safeguard the environment, maintain its current condition and keep it as habitable as possible for people and animals.
- It concerns elements of the environment that are threatened with extinction and means to keep something intact – for example an ecological system, an indigenous forest, a wetland, a river mouth ecosystem, species of animal, bird or plants on the verge of extinction. Once they disappear, they are lost forever – this required more than conservation and required preservation.
- An increase in human population leads to an increase in the demand for animals, which leads to animal extinction.
- As humans encroach on natural environments, they destroy the unique ecosystems necessary for the survival of many animal, bird and plant species.
- The Department of Environmental Affairs have developed a number of programmes to preserve resources – for example they have established new protected areas, expanded existing reserves, designated protected heritage sites and preserved wetlands.
- It aims to protect and maintain these elements in their present condition.

#### Private property

- Preservation is not likely to work as a private enterprise.
- However, let us assume a river mouth ecosystem is part of a farm which is owned privately.
- The river mouth has fresh water prawns and insects on which wild birds feed. During breeding season, some fish species breed here.

For the farmer the ecosystem has value because it is part of his farm and he can earn income from it. He sells prawns and small fish as bait and charges a fee to people using a picnic spot or a hiking trail.

- But the benefit to society is much bigger than the income to the farmer. Society has the pleasure of the scenery, sea fish catches (from the fish that breed here), birds breeding on the riverbank and unspoilt nature.

#### No compromise

- The problem arises when the farmer sees the opportunity to develop the river mouth into a holiday resort.
- Assume his income is R10 000 per year and the benefit to society is estimated at R1 million a year.
- In a market economy with property rights, the farmer should be allowed to develop if he can earn a profit exceeding R10 million – this amount, if invested at 10 % will render an income of R1 million.
- However, if all the river mouth ecosystems were developed in this way, the animal and plant life would be severely affected.
- Humans will also suffer in the long run – some resources should simply not be for sale.

#### Government policy

- The weaknesses in the market solutions require that the government should intervene in order to preserve environmental assets.
- Government could do any of the following:

#### Buy or expropriate:

- Under government control and management, social welfare may be maximised but it may be costly.
- In many instances, such assets are simply closed for human use, such as indigenous forests in South Africa.

#### Subsidise:

- Ownership could be left with private ownership but a subsidy given through maintenance grants or tax concessions.
- Such a subsidy would increase net benefits to the owner and raise the property's present value.
- A servitude may be registered.

#### Controls:

- The government could compel the owner to apply control measures, such as the quantities of prawns and young fish that may be removed, the activities of visitors, such as angling and ski boat driving, and the number of visitors allowed per day.
- Such control measures can also apply to assets that are subsidised.

## MEASURES TO ENSURE SUSTAINABILITY

- Environmental sustainability means: the ability of the environment to survive its use for economic activity. It refers to meeting the needs of the present generation without compromising the needs of future generations.
- Current levels of pollution and environmental degradation are too high – this means the free market has failed to provide an optimal utilisation of the environment.

Beyond the market, two other options are available:

- Government intervenes and then allows market forces to operate and produce an outcome;
- Government takes control and ensures, by means of laws, that the desired outcomes are reached;

## USING THE MARKET

- The market can be used to ensure sustainability, provided sustainability is to the advantage of producers.
- Market-related solutions refer to a set of measures designed to incorporate the price mechanism to better effect.

The market does not take care of social costs and benefits

- The market is driven purely by self-interest – this implies that the environment is for individuals to use for their own benefit.
- Individuals are entitled to weigh up the marginal costs and benefits of any activity only to themselves.
- In a free market, sustainability is achieved only to the extent that the prices of resources increase as they become scarce and the extent that environmentally friendly technologies are in the private interest of the business or consumer.
- But the mainstream view is that the social costs and benefits of using the environment must be taken into account also when prices and quantities are determined.
- This means that costs and benefits not only to the direct producer or consumer, but also to people in general (for now and for the future) need to be included.
- If the market does not take into account social costs and benefits, it is failing.

The market fails because of specific reasons

Four important reasons are given for market failures in this regard:

- The environment is a common resource:
- Many parts of the environment are not privately owned, such as the air and the seas. They are global commons and thus have the characteristic of nonexcludability.
- Many of the services provided by the environment do not have a price, so there is no economic incentive to economise on their use.
- Yet most environmental resources are increasingly scarce – there is rivalry in their use (such as game and fish). At zero price these goods will be overused.

Externalities:

- When people pollute the environment, for instance, the costs are borne mainly by others.
- The greater these external costs, the lower the socially efficient level of output will be.
- Because no one person owns the environment, there is no one to enforce property rights over it.
- If a business pollutes the air that you breathe, you cannot stop it because the air does not belong to you.

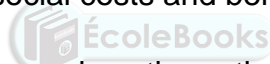
Lack of knowledge:

- People may cause environmental damage without realizing it, especially when the effects build up over a long time.
- For example the case of aerosols: it was not until the 1980's that scientists connected their use to ozone depletion. Even when scientists know the problems, consumers do not and may not appreciate the environmental effects of their actions.
- So even if people would like to be more environmentally friendly in their activities, they might not have the knowledge to do so.

Carelessness:

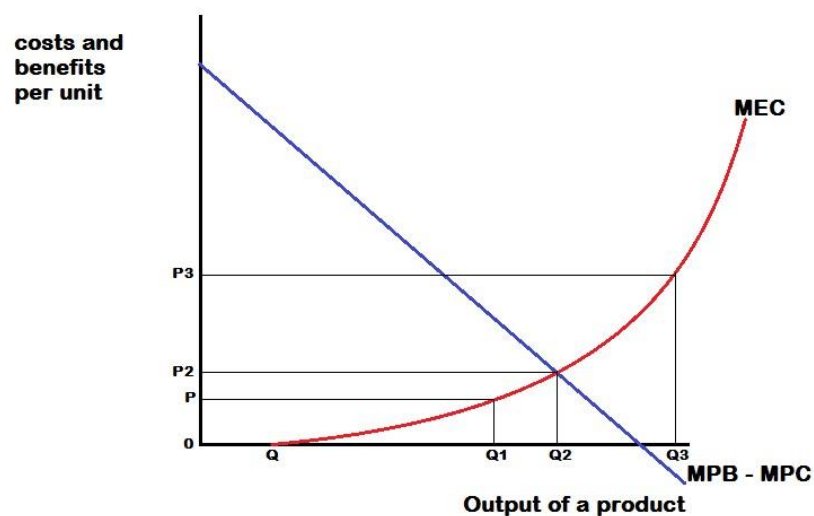
- Consumers and businesses are frequently prepared to continue with various harmful practices and leave future generations to worry about their environmental consequences.

The mechanism of market and social costs and benefits



- If pure market forces fail to produce the optimal result of sustaining the environment, it means that the market as a mechanism has failed because it did not consider all the costs and benefits resulting from human production activities when establishing a price.
- As a result, the quantities that were produced and consumed were inappropriate.
- Let us take the case of the production of a product that yields benefits to consumers, but which involves pollution to the environment. What is the optimal production level of such a product? The choices are illustrated in the graph below:
- The MEC curve shows the marginal external cost as the output of the product increases.
- The straight line  $MPB - MPC$  indicates the net marginal private benefit from the product (marginal private benefit minus marginal private cost).

- If quantity  $Q$  is produced, there is no pollution and the environment can cope with the waste generated.
- Curve  $MEC$  becomes steeper as output increases – this is because the environment is increasingly unable to cope with the waste. The cost of pollution is accelerating.
- The  $MPB - MPC$  curve slopes downwards because marginal private benefits decrease as more of the product is consumed. This is the principle of diminishing marginal utility.
- On the other hand, marginal private costs increases because of diminishing marginal returns.
- In terms of private costs and benefits it is profitable to produce additional units of the product up to  $Q_3$  – at this point  $MPB$  equals  $MPC$  and private gain is maximised.
- A perfect market will produce  $Q_3$  output with a marginal social pollution cost of  $P_3$ .
- However, the socially efficient level of production is  $Q_2$  with the lower marginal social pollution of  $P_2$ . At this point the marginal net benefit is equal to the marginal external cost of pollution where  $MSB = MEC$ , and social benefit is zero.
- To prevent any pollution, production output could be restricted to  $Q$ .



## GOVERNMENT INTERVENTIONS

- Public sector intervention in markets aims at achieving social efficiency with regard to environmental sustainability. The following are such policies:
  - Granting property rights;
  - Charging for the use of the environment;
  - Environmental taxes;
  - Environmental subsidies;
  - Marketable permits;
- Policies can be used effectively to deal with a variety of environmental issues.
- New policies can be introduced to replace previous policies that turned out to be harmful to the environment.

### Granting property rights

- The granting of private property rights has long been known for its conservationist effects.

- It ensures that people care for the things that belong to them. In fact, they will try to use them profitably for as long as possible, even generations to come.
- Therefore, to prevent fauna and flora species from becoming extinct, allow people property rights over them – they will be preserved with little cost to taxpayers.
- If property rights can be expanded to common goods, such as clean air, those suffering from pollution can charge the polluters for the right to pollute. For example, if you are granted a property right to clean air on your property, you can charge the power station for the smoke pollution which gives you asthma. The charge should cover the cost to install and maintain air cleaning machines, similar to air conditioners. If the power station pays the fee, they have the right to pollute the air on your property.
- We can use the graph on the previous page to illustrate this: If output is less than  $Q_2$ , the marginal profit to the polluter exceeds the marginal pollution cost to the sufferer. If the sufferer imposes a charge on the polluter that is greater than the sufferer's marginal pollution cost but less than the polluter's marginal profit, both sides benefit from more of the product being produced. Such a situation can continue up to  $Q_2$ .
- However, extending property rights like this is normally impractical, particularly where there are many polluters and many victims.
- But the principle of the polluters paying victims to reduce pollution is sometimes followed by governments – for example in terms of the Kyoto Protocol, developed countries agreed to provide financial assistance to developing countries because they cause less pollution. The developed countries therefore pay for their right to pollute.

#### Pay for environmental use

- The pricing of the environment is one method used by the government to impose environmental charges.
- This means the government levies a fee on consumers and producers for the waste (solid, liquid and gas) they produce and dump in the environment.
- In South Africa local authorities levy charges from rubbish collection or sewerage disposal on households, businesses and others.
- In developed countries emission charges are levied on industries and vehicle owners for discharging gases.
- The best result is obtained if these charges are proportional to the waste produced. A fixed total charge, such as a monthly or yearly tax by contrast, will not encourage waste producers to reduce their waste, since it will not save them any money.

#### Levying of environmental tax

- Rather than charging for environmental use, a tax could be imposed on the output of a good, wherever external environmental costs are generated.
- These are known as green taxes. They are charged on items such as tyres.
- In this case, the product already has a price and the tax has the effect of increasing the price.



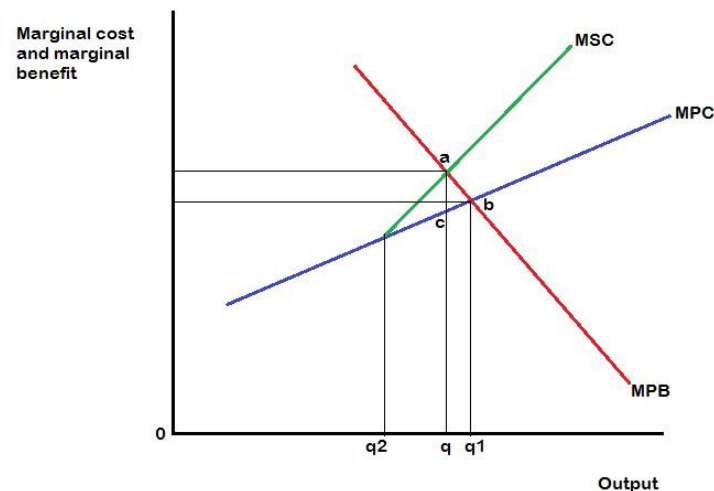
- To achieve a socially efficient output, the rate of tax should be equal to the marginal external cost.

### Paying environmental subsidies

- An alternative method is to provide subsidies for activities that reduce environmental damage.
- The cost to reduce or prevent the harmful effects is recovered from the proceeds of taxation.
- Subsidies could be for the following:
  - The development of new techniques or equipment, for example, to save energy, or to reduce smoke, or for the use of environmentally-friendly energy such as wind, tide and sun.
  - o To encourage production of environmentally friendly substitutes such as unleaded petrol.
  - To encourage recycling of waste, such as bottles, cans and cardboard.
- The rate of the subsidy should be equal to the marginal external benefit.
- Businesses prefer this method to taxes.

### Issue marketable permits

- Assume the following figure illustrates the situation of a number of pulp producing businesses next to a river flowing through a forest.
- During the pulp production process a lot of water is circulated through the factory to dispense with the crushed pulp particles.
- The water is later drained and returned, but polluted by chemicals, to the river.
- The government decides that the pollution needs to be reduced.
- The output of the chemicals that pollute the water of all the pulp businesses along the river is shown on the horizontal axis.
- The government decides that it will allow pollution up to  $q$ . Each business is given a licence (or permit) to emit a share of the  $q_2 - q$  chemical pollutants.
- If government wishes to charge for this pollution licence it could raise a levy or a tax to an amount of  $ac$  – that is the amount that the businesses will be able to afford.
- Businesses are allowed to sell their licences to other businesses. For example if a business reduces its pollution by half, it could sell some of its permit to another business that wants to expand production and will increase its emission of pollutants.



- In developed countries the businesses that obtain these licences or permits can trade them in a permit market.
- Such markets are not yet operational in South Africa. However, the government is preparing the Department of Energy to start issuing such licences for different kinds of pollution that could be traded on international markets.
- If a government wants to reduce pollution over time, the permits can be designed to reduce the amount of permitted pollution every year.
- In the USA shrinking marketable permits were used to reduce the amount of lead in petrol during the 1980's.

## **PUBLIC SECTOR CONTROL**

### **COMMAND AND CONTROL**

- Sometimes government intervention does not achieve the desired outcomes. Then the government has to take direct control.
- This entails the setting of maximum permitted levels of, for example emissions (such as CO<sub>2</sub>), or resource usage (such as tons of fish), or minimum acceptable levels of environmental quality.
- Inspectors monitor activities and impose fines if the legal limits are not respected.
- Virtually all developed countries have environmental regulations of some kind covering areas such as air and water pollution, noise, the marketing and use of dangerous chemicals, waste management, the environmental impacts of new projects (power stations, roads and mines for example), recycling, depletion of the ozone layer and global warming.
- There are three approaches to the CAC systems:

#### Quantity standards:

- These methods focus on amounts of pollution caused, irrespective of the environmental impact.
- As technology for reducing pollutants improves, so tougher standards could be imposed, based on the best available technology.

#### Quality standards:

- These methods focus on the environmental impact.
- For example standards are set for air and water purity.
- Municipalities in South Africa can qualify for blue drop status on account of the purity of their tap water.

#### Social impact standards:

- Here the focus is on the effect on people.
- For example, tougher standards for noise levels will be imposed in areas that are more densely populated.

#### Voluntary agreements

- Rather than imposing laws and regulations, the government can seek to enter into voluntary agreements with businesses for them to cut pollution.
- Such agreements may involve a formal contract and therefore be legally binding, or they may be more informal commitments made by businesses.

- Businesses prefer voluntary agreements to regulations, because they can negotiate such agreements to suit their own particular circumstances and build them into their planning.

## Education

- The attitude of people is very important in determining the environmental consequences of their actions.
- If children and adults were made more aware of environmental issues and the consequences of their actions, then their consumption habits would become more environmentally friendly.
- Education plays a major role in improving people's capacity to manage the environment.
- Throughout the developing world, a wide range of innovative approaches are being used to educate people in managing their environments and in so doing, improve their livelihoods:
  - Community wildlife reserves managed for sport hunting have been transformed into areas managed for conservation.
  - Households have become conscious of the importance of waste-recycling.
  - o Co-operatives have been established to produce organic food for the domestic and international markets, and in so doing, have revitalised traditional agricultural systems.
- Pressure groups such as the Green party, Greenpeace and Friends of the Earth have forced industries to encourage managers to integrate environmental responsibility into all their business decision making.

## INTERNATIONAL MEASURES

- Many environmental problems are not only local or national but are global.
- For example emission of motorcar gases that have a greenhouse effect contributes to global warming. So does deforestation on the opposite side of the globe.
- Global issues require joint action by governments around the world.
- This has led to governments committing themselves to hundreds of multilateral environmental agreements.
- The world's biggest concerns are the loss of biodiversity, toxic and hazardous waste and climate warming.

## Sustaining biodiversity

- Biological diversity includes two related elements:
  - The amount of genetic variety among individuals within a single species;
  - The number of species within a community of organisms.

- Due to species extinction, the diversity of the forms of life that inhabit the planet is decreasing at an unprecedented rate. Extinction is an irreversible process.
- These extinctions are occurring at precisely the moment in history when we would be most able to take advantage of the gene pool of plant diversity.
- Modern techniques now make it possible to transplant desirable genes from one species into another, creating species with new characteristics such as enhanced resistance to disease or pests.
- The gene pool must be diverse to serve as a source of donor genes.
- Trade in endangered species is prohibited internationally.
- Control is executed through the use of permits and quotas to regulate trade in certain species that might become endangered.

### **Chemical waste**

- Toxicity occurs when living organisms experience detrimental effects following exposure to a substance. Such exposure may result in any of the following:
  - Immediate death, for example from insecticides or pesticides;
  - Death after a time period due to digestive incapacity, nerve malfunctioning, tissue degeneration, cancer, etc.;
  - Infertility of humans, animals or plants;
- In normal concentrations most chemicals are not toxic. Others are toxic by design (like DDT). Yet in excess concentrations even a benign substance can become toxic, for example most medicines in incorrect dosages.
- The production of chemicals result in chemical waste and disposing of such waste is problematic. One way to get rid of it is to export it to countries that are willing to accept it in exchange for compensation.
  - The UN facilitated a number of agreements with regard to the disposal of toxic chemicals.

South Africa has signed most of them, including the following:

- The Stockholm Protocol on Persistent Organic Pollutants – it bans 12 of the deadliest man-made chemicals. Certain countries like South Africa can continue to use DDT to contain the malaria carrying mosquito but will phase it out in due course.
- The Rotterdam Convention – it protects countries that lack adequate infrastructure to monitor the import and export of dangerous chemicals.
- Prior Informed Consent (PIC) – this agreed procedure ensures that governments have all information they need for assessing risks and taking informed decisions on chemical waste imports.

### **Hazardous waste**

- This is more than just chemical waste. It includes toxic metal waste, such as lead and mercury, radioactive waste and inorganic compounds such as some pesticides and waste produced by petrochemical plants.
- What is significant about these types of waste is not the fact that they are dangerous to living organisms and the ecosystem as a whole, but that because of their very slow decomposition process they tend to persist and accumulate in the environment for a very long time.

- The Basel Convention on the Control of Trans-boundary Movement of Hazardous Wastes and their disposal, allows parties to only export a hazardous waste to another party that has not banned its import. Parties may not import from or export to a non-party.
- Parties are obliged to prevent the import or export of hazardous waste if they have reason to believe that the waste will not be treated in an environmentally friendly manner at their destinations.
- South Africa is a party to the Basel Convention.

### Climate change policy

- This is a global problem that can only be solved by widespread international co-operation.
- Reaction to climate change rests on two pillars: adaption and mitigation.
- Adaptation:
  - Refers to the practical steps used to protect countries and communities from the disturbance and damage that can result from climate change.
  - For example if climate change is expected to lead to floods in certain areas, flood walls could be erected and human settlements moved out of the flood plains.
  - Adaptation begins with research concerning the most appropriate ways in which a region can adapt to the effects of climate change.
  - It then progresses to make sure that adaptation measures can be implemented. o Although adaptation may be necessary in certain cases, it should not be seen as a longterm solution to the problem of climate change – our planet will not be able to survive if we continue to produce greenhouse gases at the same rate as we currently do.
  - Mitigation is regarded as the longer-term solution.

### Mitigation:

Refers to human actions to either reduce the sources of greenhouse gases and/or increase greenhouse gas sinks.

### Its impact includes changes in:

- sea temperatures o weather patterns o land use – desertification occurs o animal life – migration and breeding o plant life – flowering o disease zones such as malaria o water supplies
- natural disasters such as hurricanes and flooding
- Climate change has enormous economic and social consequences.
- Climate change is the product of global warming, and global warming is the result of gas emissions such as CFC's and CO<sub>2</sub>. These gases are known as greenhouse gases.
  - CFC's cause depletion of the ozone layer so that more heat penetrates to the earth.
  - CO<sub>2</sub> creates a blanket in the atmosphere that traps the heat and causes a greenhouse effect, leading to global warming.
- The United Nations Framework Convention on Climate Change (UNFCCC) recognises the problems posed by climate change. It sets an ultimate objective of stabilising greenhouse gas concentrations in the atmosphere at a

level that would prevent dangerous human induced interference with the climate system.

- It was based on voluntary reduction of CO<sub>2</sub> levels. A lack of success led to the signing of the Kyoto Protocol in 1997, in which the 186 signatories agreed on a set of binding emissions targets for developed countries based on 1990 levels. The objective was to reduce greenhouse gas emissions by an average of 5.2 % by the year 2012.
- This was not achieved and the Kyoto Protocol agreement was not renewed at the COP 17 in Durban in 2011.
- In addition to agreeing on specific target emissions the deal also included the following:
  - Countries must submit plans for reducing greenhouse gas emissions and provide updates on progress in meeting their targets.
  - An international system of trading in carbon emissions will be initiated. Industrialised countries will be able to claim credits for removing CO<sub>2</sub> from the atmosphere through such actions as planting and managing forests and changing farming practices.
  - Countries failing to meet their first set of targets by 2012 will be penalised.
  - Industrialised countries will provide some financial assistance to developing countries to help them adapt to climate change and to provide new clean technologies.
- In spite of the agreement, immense problems remain, not least of which is the extent to which developing countries can or should be expected to comply with emissions targets.
- It seems likely that greenhouse gas emissions from developing countries will reach the level of those in developed countries by between 2015 and 2020.
- Yet the costs to developing countries of introducing new clean technologies will be huge, even with assistance from developed countries.

#### Loss of indigenous knowledge

- Indigenous knowledge refers to the knowledge used by indigenous people to make a living in a particular environment.
- Traditionally such people used organic methods and natural processes. Using these to sustain the environment is both wise and essential.
- It also gives programmes legitimacy and credibility in the eyes of the local people and the outside world.
- Local capacity building among indigenous people is a crucial aspect of sustaining the environment.
- Capacity building means that indigenous people learn more of the natural world beyond their traditional lifestyle and experience.
- If these aspects are blended with indigenous knowledge, it can provide a powerful basis from which alternative ways of managing resources can be developed.
- However, care should be taken that indigenous knowledge is not overwhelmed and lost forever.

## INTERNATIONAL AGREEMENTS

- Since 1972 a number of international events have been organised to address the issues of sustainable development and the impact of current global practices on the future of our natural resources.
- Many decisions have been made at these conferences in order to provide guidelines to the developing countries of the world.

### RIO DE JANEIRO SUMMIT (UNCED)

- In 1992, 172 countries took part in the Earth Summit – the UN Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil.
- The primary purpose was to reconsider the best path to economic development and to come up with action plans to ensure that Earth's natural resources were protected and pollution minimised.
- Clear objectives for sustainable development were established.
- One of the main themes to emerge from the Earth Summit was an acknowledgement of the importance of cooperation in addressing environmental concerns that threaten sustainability.
- The conference helped to make countries aware of the dangers of unsustainable development.
- Unfortunately, the principles outlined and accepted at the summit were not binding and subsequently many countries did not conform to them.
- The conference deliberations produced Agenda 21 and from this a declaration of principles called the Rio declaration was derived.
- Agenda 21 and the Rio Declaration deal with economic, social and environmental objectives.

### Agenda 21

Section 1 of Agenda 21 deals with social and economic issues such as poverty eradication, changing consumption patterns, protecting and promoting human health conditions.

Section 2 deals with conservation and management of resources for example:

- The protection of the atmosphere;
- Management of land resources;
- Combating deforestation;
- Combating desertification and drought;
- Sustainable mountain development;
- Promoting sustainable agriculture and rural development;
- Conservation of biological diversity;
- Environmentally sound biotechnology;
- Protection of the oceans, seas and semi-enclosed seas, and coastal areas;
- Protection of the quality and supply of freshwater resources;

- Management of toxic chemicals and dangerous products;
- Management of hazardous waste;
- Management of solid waste and sewage-related issues;
- Management of radioactive waste;

#### Rio declaration

- The Rio declaration is a statement of 27 principles upon which nations agreed to base their actions in dealing with environmental and development issues. It highlights the importance of international co-operation in addressing those environmental concerns that threaten sustainability.
  - Goal: to establish a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors in society and people.
  - Humans are at the centre of sustainable development as they are entitled to a healthy and productive life in harmony with nature.
  - The following principles focus on the environment:
    - Principle 4: Environmental protection constitutes an integral part of development.
    - o Principle 7: Cooperation to conserve, protect and restore the health of the earth's ecosystems.
    - Principle 14: States should not move substances that cause environmental degradation or are harmful to human health.
    - Principle 15: Prevent environmental degradation.
    - o Principle 16: The polluter should bear the cost of its pollution.
    - Principle 17: Environmental impact assessments are obligatory.
- JOHANNESBURG SUMMIT (WSSD)

- Johannesburg hosted the World Summit on Sustainable Development which took place in 2002.
- Representatives of over 200 countries attended the summit.
- The agenda for the summit was organised around 5 issues:
  - Energy;
  - o Water and sanitation;
  - Health;
  - o Agriculture;
  - o Biodiversity;In addition, environmental issues and health issues particular to Africa were highlighted. Issues such as HIV/Aids and food security received attention.

Agreements reached in Johannesburg are a guide to action that will take forward the decisions taken at the Rio Earth Summit and embrace the Millennium Development Goals (MDG's).

- The summit produced 2 documents:
  - Johannesburg Declaration on Sustainable Development
  - o Plan of Implementation
- The delegates adopted a broad plan containing specific global targets in poverty reduction, clean water and sanitation, and infant mortality to address the divide between rich and poor.



**Agreements reached:**

- Poverty eradication:
  - Halve the proportion of the world's population living on less than \$1 a day by 2015. o Halve the number of people suffering from hunger by 2020.
- Water and sanitation:
  - Halve the number of people who lack clean drinking water and basic sanitation by 2015.
- Energy:
  - Increase the global share of renewable energy and energy for sustainable development.
  - Extend energy services to 35 % of African households over the next 10 years.
- Chemicals:
  - Aim to use and produce chemicals in ways that do not lead to significant adverse effects on human health and the environment by 2020.
  - Reduce air pollution and global warming.
- Management of the environment:
  - Water: Improve water and sanitation and develop integrated water resource management and water efficiency plans.
  - Oceans and fisheries: By 2015, restore depleted fish stocks.
  - Atmosphere: Improve developing countries' access to alternatives to ozone-depleting substances by 2020.
  - Biodiversity: Cut the rate at which rare plants and animals are becoming extinct by 2020.
  - Forests: Accelerate implementation of the Intergovernmental Panel on Forests IPF proposals and restore forests to more sustainable yields.

**RIO +20**

- The United Nations Conference on Sustainable Development summit took place in Rio de Janeiro, Brazil from 20 – 22 June 2012 – 20 years after the 1992 Earth Summit.
- 188 countries attended the summit.
- The conference focused on two themes:
  - How to build a green economy to achieve sustainable development and lift people out of poverty, including support for developing countries that will allow them to find a green path for development.
  - How to improve international coordination for sustainable development.

The following issues were tackled at the Rio+20 summit:

- Making the transition to greener economies while focusing on poverty eradication; o Protecting our oceans from overfishing, the destruction or marine ecosystems and the adverse effects of climate change;
- Making our cities more liveable and more efficient;

- Broadening the use of renewable energy sources that can significantly lower carbon emissions, as well as indoor and outdoor pollution, while promoting economic growth.

#### The green economy

- Sustainable growth and poverty eradication are essential and it is preferable that these do not damage the environment.
- At the two summits before Rio+20, developed countries were unwilling to accept firm commitments on the environment that could be enforced. It appears that these countries failed to maintain their level of commitments.
- Therefore, one of the aims of Rio+20 was to get developed countries, especially the USA, to renew their original commitments.
- “The Future we want”-document has a large section on the green economy.
- It was agreed that the green economy would be one of the tools for sustainable development, that it would not be a rigid set of rules, and that it would have a set of 16 principles including avoidance of trade protection and aid conditionality.
- They agreed that the UN Environment Programme would be strengthened and upgraded, including through universal membership its governing council and increased financing.
- These are very weak actions to be carried forward and hardly convince developing countries that they will get the means to implement new obligations on the environment.



#### Development goals

- A new item is the decision to set up sustainable development goals (SDG's) to replace the existing Millenium Development Goals in 2013 through a 30-member working group in the UN for this purpose, nominated by governments.
- The topics in the goals would include all three aspects of sustainable development – economic, social and environmental.

#### Progress

- Enforceable commitments and international accountability are still lacking. They are needed to realise essential objectives sooner and before it's too late, such as in the case of global warming.
- Over the past 2 decades, the world has realized that our natural resources are under serious pressure.
- There is a growing awareness of the need to ensure sustainability – this has led to a whole new generation to consider the requirements of sustainable development in its decisions to produce or consume.
- Protecting the environment is not enough – we need to encourage public and private decisionmakers to incorporate environmental and social concerns into economic planning and growth strategies.

- This needs new thinking from policy makers, business people and many other economic participants (public and private) so that they can plan and implement sustainable development initiatives.
- We have to accept it is a process. We have to embrace it as a process, look at the positive things we have done, and keep working, as there is much more to do.

## KYOTO PROTOCOL

- The voluntary measures agreed to at the Rio summit were not effective and problems contributing to climate change were continuing.
- The Kyoto Protocol is an international agreement between countries to reduce emissions of greenhouse gases.
- Countries came together and committed themselves to reducing their total emissions of greenhouse gases by 5 %.
- Each country was given a specific target.
- The Kyoto Protocol has three categories:
  - Industrialised countries: Are required to reduce their emissions to target levels 5.2 % below that of 1990. If they are unable to do so they must purchase emission credits from countries that are below those levels.
  - Developed countries: Are required to pay for costs of developing countries.
  - Developing countries: Have no requirements under the Protocol. They can sell emission credits and receive funds and technology from industrialised countries for climate-related studies and projects.
- Unfortunately, China was excluded from this agreement and the USA withdrew.

## MILLENIUM DEVELOPMENT GOALS

- At the 2000 United Nations Millennium Summit, world leaders from developed and developing countries committed themselves at the highest political level to a set of 8 goals which they intend to achieve by 2015.
- When these goals are achieved they will see an end to extreme poverty worldwide.
- The Millennium goals are:
  - Eradicate extreme poverty and hunger; o Achieve universal primary education; o Promote gender equality and empower women;
  - Reduce child mortality; o Improve maternal health;
  - Combat HIV/Aids, malaria and other disease; o Ensure environmental sustainability; o Global partnership for development;
- Specific targets were set for each goal, as well as indicators to measure progress.

The target for Goal 7 (Ensure environmental sustainability) is:

  - The integration of the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources.

- The indicators identified for this target are:
  - Proportion of land area covered by forest;
  - Ratio of area protected to maintain biological diversity to surface area;
  - o Energy use (kg of oil equivalent) per USD;
  - o Carbon dioxide emissions and consumption of ozone-depleting CFC's.
  - o Proportion of population using solid fuels.
  - o Proportion of population with sustainable access to improved water source, urban and rural;
  - Proportion of urban population with access to improved sanitation;

### **UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (COP17)**

- In 2011, the United Nations Climate Change Conference was hosted in Durban.
- The main goal of the conference was to establish a treaty to limit carbon emissions and plan strategies to keep global temperature rise to less than 2°C in the 21st century.
- Although the framework for this treaty was established, it was not finalised.
- One of the most significant outcomes of the conference was the establishment of a Green Climate Fund (GCF) for which a management framework was adopted.
- This fund aims to distribute \$100 billion per year to help poor countries adapt to climate impacts and adopt strategies to ensure environmental sustainability.

